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ELECTRICAL WHOLESALING

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THE COMPUTER DECISION TODAY— SYSTEMS, SOLUTIONS AND SUPPORT

THE 11TH ANNUAL MARKET PLANNING GUIDE

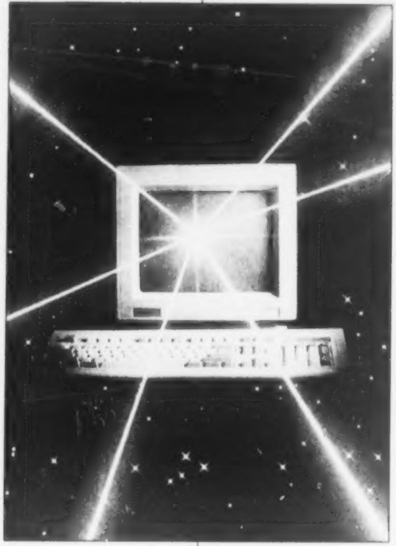
LANDSCAPE LIGHTING

VOLUME 70
NUMBER 11

ELECTRICAL WHOLESALING

NOVEMBER
1989

FEATURES



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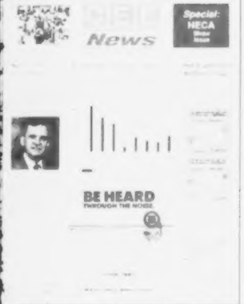
ELECTRICAL
WHOLESALING
SUMMIT ELECTRIC—WHERE SYSTEMS CONTRACTS ARE A WAY OF LIFE

EC&M
WIRING TODAY'S OFFICES



ELECTRICAL WHOLESALING

THE PUBLISHER'S NOTE

The three magazines shown here carry a new masthead in their November issues. On Sept. 29, Intertec Publishing Corp. in Overland Park, Kan., purchased ELECTRICAL WHOLESALING and *EC&M* magazines from McGraw-Hill, forming a new electrical group that includes *CEE News,* which Intertec already owned. Intertec has been publishing quality magazines since 1886—for over 103 years. From the looks of it, ELECTRICAL WHOLESALING and *EC&M* are in good hands.

Things change, yet they remain the same. The editorial staffs on all three publications (and on *Electrical Marketing* newsletter) are intact and will remain so, as will the magazines' business managers. As publishers, we will continue to serve our readers with four leading electrical publications dedicated to professional education and business news. We have always claimed to have our arms around this industry, and that premise is now stronger than ever.

Intertec offers a "winning combination" of publications that serves both users of electrical products and the purveyors of those same products. The charters of each magazine are clearly drawn. ELECTRICAL WHOLESALING remains pledged to helping distributors run their businesses more profitably; *EC&M* remains a highly technical publication that offers engineering, installation and maintenance expertise to a dedicated user market; and *CEE News* covers product and industry news in depth in a tabloid format.

Combined, these publications offer a new strength to reader and advertiser alike. I am confident that the magazines will only get better under Intertec leadership and will truly offer a winning combination to anyone reading or advertising in these well-known publications.

We at Intertec are dedicated to both readers and advertisers, and we welcome any comments you care to pass along to us about this new publishing venture.

John G. Behmke

JOHN G. BEHMKE, Publisher

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REGIONAL FACTBOOK

RAYMOND VELLA

■ Contained in this Regional Factbook are many of the figures a researcher will need to fill in the market potential worksheets in the previous article. To create individualized data for smaller locales or for areas not listed here, use the information sources listed on the last page of that article.

Here's what can be found by region inside this Factbook:

- How the typical electrical wholesaler divides up sales—by product line, by customer type and by end-use market.
- ELECTRICAL WHOLESALING's estimates on 1989 employment in four end-user markets important to electrical wholesalers.
- The latest data on electrical wholesalers' sales, including forecasts for this year and 1990.

The Factbook contains data for the nation, nine regions, 50 states and 266 local market areas. A national summary appears at the end of this introductory section. Data grouped by region follow.

All sales data in this Regional Factbook use the *1982 Census of Wholesale Trade* as their benchmark. (The 1982 Census figures for electrical wholesalers' sales can be found in the November 1985 issue of ELECTRICAL WHOLESALING.) Estimates for sales in 1986, 1987 and 1988 and forecasts for 1989 and 1990 are based on annual surveys conducted by ELECTRICAL WHOLESALING.

Users of the data in this Regional Factbook should note that the metropolitan areas listed almost always include the central city plus surrounding counties. For example, Newark, N.J., covers Essex, Morris, Somerset and Union Counties in New Jersey, a much broader area than most people would assume at first glance.

The sales data for metropolitan areas, based as they are on the *1982 Census of Wholesale Trade*, are grouped into Standard Metropolitan Statistical Areas (SMSAs). Since that time, the government has revised its approach to defining metropolitan areas. The changes reflect population dispersion according to the *1980 Census of Population*. The SMSA is no longer used; this term has been shortened to MSA (Metropolitan Statistical Area). If an area has more than one million population, it's now called a CMSA (Consolidated Metropolitan Statistical Area). These, in turn, consist of major components called PMSAs (Primary Metropolitan Statistical Areas).

The employment data in the Regional Factbook are based on the *1989 Employment and Earnings*, put out by the U.S. Department of Labor; and it uses the new definitions for metropolitan areas.

In many cases, the definitions for the territory covered by the old SMSAs and the new MSAs are the same. For some, however, a county may have been added or deleted. In other words, the data for sales and the data for employment presented here for any given local area may not represent precisely the same collection of counties.

This dichotomy should present no real difficulty. The changing definitions simply represent reality. Cities grow in size, and their influence spreads over greater areas. Or subareas grow large enough to stand and be counted on their own.

In the most recent Census year for wholesale trade (1987), the new definitions were in use for the collecting of Census data. When the Census data becomes fully available, scheduled for 1990, we will benchmark our data to the new series, bringing the sales statistics onto the same basis as the employment statistics for each of the metropolitan areas. ☐

THE NATION

PRODUCT MIX

■ Distributors sell a full market basket

	NATION	NEW ENGLAND	MIDDLE ATLANTIC	EAST NORTH CENTRAL	WEST NORTH CENTRAL	SOUTH ATLANTIC	EAST SOUTH CENTRAL	WEST SOUTH CENTRAL	MOUNTAIN	PACIFIC
Residential lighting fixtures	4.0%	5.2%	3.9%	5.4%	1.7%	4.5%	1.6%	1.8%	1.6%	2.8%
C/I lighting fixtures	7.6%	9.0%	10.7%	7.6%	6.1%	5.4%	4.0%	8.6%	3.8%	6.5%
Outdoor lighting fixtures	2.8%	5.6%	3.3%	1.8%	2.6%	2.4%	1.3%	3.0%	1.8%	1.7%
Lamps	6.4%	7.4%	8.5%	6.0%	5.6%	5.0%	7.6%	6.7%	5.1%	5.2%
Ballasts	1.7%	1.4%	1.4%	1.1%	1.9%	1.9%	1.6%	2.0%	1.9%	2.9%
Building wire	8.9%	10.8%	7.3%	7.0%	7.4%	9.2%	5.5%	11.5%	7.6%	11.4%
Portable cords and cables, cord sets	1.6%	1.6%	1.4%	1.4%	1.5%	1.8%	3.4%	1.8%	2.3%	2.5%
Power cable (includes service entrance)	2.9%	4.1%	2.4%	2.7%	1.1%	4.2%	5.3%	3.3%	2.5%	1.5%
Specialty wire (telephone, fiber optic, electronic, undercarpet)	1.0%	2.9%	1.0%	1.1%	.5%	.8%	.4%	.6%	.7%	.3%
Lugs, connectors and terminations	1.4%	1.3%	1.1%	1.3%	.8%	1.4%	1.1%	2.0%	1.8%	4.1%
Fasteners and hangers	.7%	.6%	.8%	.7%	.5%	.6%	.5%	1.2%	1.4%	.4%
Pole line hardware/ utility supplies	3.4%	.2%	.3%	4.2%	6.4%	4.1%	1.8%	5.2%	7.9%	.1%
Electrical tape, insulating materials	.9%	.9%	.8%	1.1%	1.0%	1.0%	1.5%	1.0%	.9%	.9%
Metal conduit (rigid and flexible) and EMT	3.8%	3.1%	3.6%	5.2%	3.1%	3.0%	4.0%	3.6%	4.2%	4.2%
Nonmetallic conduit	1.6%	2.3%	1.8%	.8%	1.6%	1.4%	.6%	1.8%	1.8%	2.4%
Conduit fittings and bodies	3.0%	2.7%	2.7%	3.2%	1.9%	3.2%	4.1%	3.6%	3.2%	3.2%
Elbows, couplings and nipples	.9%	1.2%	.8%	1.0%	1.0%	1.0%	.6%	.9%	1.4%	1.0%
Boxes	1.9%	1.5%	2.3%	2.3%	1.9%	1.9%	1.4%	1.4%	2.1%	1.4%
Enclosures	2.3%	2.9%	2.2%	1.7%	2.7%	1.8%	1.7%	2.2%	3.8%	4.8%
Panelboards	3.7%	3.7%	2.7%	2.0%	4.2%	3.7%	3.2%	5.9%	2.8%	4.3%
Safety switches	2.1%	1.3%	1.8%	1.7%	2.7%	3.0%	1.7%	2.0%	2.2%	2.0%
Switchgear	3.5%	3.1%	3.3%	3.2%	4.5%	3.1%	6.0%	3.6%	3.7%	3.5%
Circuit breakers (including GFI) and load centers	4.3%	2.8%	5.0%	4.2%	2.5%	4.8%	5.2%	5.2%	3.3%	3.2%
Fuses	1.9%	1.1%	1.7%	1.6%	1.8%	2.4%	3.1%	2.0%	2.5%	2.1%
Transformers (except ballasts)	2.2%	1.6%	1.9%	2.0%	5.2%	1.6%	2.6%	1.9%	3.6%	1.8%

■ Product Mix-continued

	NATION	NEW ENGLAND	MIDDLE ATLANTIC	EAST NORTH CENTRAL	WEST NORTH CENTRAL	SOUTH ATLANTIC	EAST SOUTH CENTRAL	WEST SOUTH CENTRAL	MOUNTAIN	PACIFIC
Bus duct	.6%	.6%	.6%	.5%	.7%	.8%	.5%	.9%	.2%	.1%
Motor controls, starters and relays	7.3%	4.8%	9.4%	7.5%	6.9%	8.7%	10.5%	5.8%	5.5%	7.8%
Programmable logic controllers	3.9%	4.8%	3.5%	6.2%	4.2%	2.2%	6.1%	3.4%	1.3%	3.8%
Industrial computers	.3%	.1%	.3%	.2%	.3%	.2%	.6%	.2%	1.3%	.7%
Motors and drives	1.6%	.7%	1.2%	1.8%	5.0%	1.8%	2.6%	.9%	.8%	.4%
Wiring devices (includes GFI types)	3.5%	2.8%	3.6%	3.4%	2.6%	4.3%	3.0%	1.9%	5.6%	5.3%
UPS, computer power conditioning and protection equipment	.4%	.4%	.5%	.2%	.2%	.4%	.5%	.7%	1.1%	.7%
Instruments and test equipment	.5%	.3%	.3%	.5%	.5%	.5%	2.0%	.7%	1.7%	.2%
Tools (power and manual)	1.0%	1.0%	1.1%	1.0%	.5%	1.3%	.5%	.6%	1.6%	.6%
Electric heating equipment	.8%	1.3%	1.5%	.7%	.6%	.7%	.5%	.1%	.8%	.5%
Air conditioners	.2%	.2%	†	.2%	.7%	.1%	†	†	.2%	.4%
Fans and ventilating equipment	1.1%	1.0%	1.0%	1.0%	.8%	1.7%	.4%	.6%	1.6%	.2%
Sound, signal/alarm and communications equipment	.5%	.7%	.6%	.3%	.8%	.5%	.2%	.7%	1.0%	.3%
Electric generator sets	.2%	.2%	1.2%	†	†	.1%	†	†	†	†
Electrical appliances, housewares, table lamps	.4%	1.3%	†	.1%	†	.6%	.1%	.4%	†	.2%
Electronic products	1.0%	.3%	.5%	2.0%	4.3%	.5%	1.8%	.1%	.2%	.4%
Other	2.3%	.9%	2.0%	4.2%	1.6%	2.3%	1.1%	.2%	3.1%	4.3%

Data for all types of electricai wholesalers † Less than .1%

CUSTOMER MIX

■ Distributors sell to a broad cross-section of businesses

	NATION	NEW ENGLAND	MIDDLE ATLANTIC	EAST NORTH CENTRAL	WEST NORTH CENTRAL	SOUTH ATLANTIC	EAST SOUTH CENTRAL	WEST SOUTH CENTRAL	MOUNTAIN	PACIFIC
Electrical contractors	40.8%	39.6%	41.4%	35.5%	45.1%	42.9%	43.3%	42.3%	47.9%	35.2%
Non-electrical contractors	6.5%	5.8%	6.8%	5.5%	5.7%	7.4%	8.1%	5.2%	5.0%	5.7%
Commercial/institutional accounts	7.9%	9.7%	8.0%	7.6%	7.7%	7.9%	7.6%	5.8%	7.4%	8.0%
Industrials (for maintenance and repair)	18.4%	18.6%	17.7%	23.1%	15.4%	18.3%	18.0%	16.7%	19.0%	15.2%
Industrials (for OEM)	6.9%	6.8%	7.7%	11.8%	4.8%	3.6%	3.8%	6.2%	4.3%	8.4%
Utilities (private, REA, PUD, municipals)	3.9%	3.4%	2.3%	2.9%	8.4%	4.4%	3.3%	6.4%	4.2%	4.2%
General public (retail)	4.4%	5.8%	5.3%	4.0%	3.0%	5.0%	4.7%	3.4%	2.5%	4.3%
Retailers (for resale)	4.5%	3.2%	3.5%	4.0%	5.0%	4.0%	5.5%	5.2%	3.0%	7.3%
Government (federal, state, local)	3.5%	2.9%	3.2%	2.9%	3.8%	3.4%	3.4%	3.2%	4.8%	4.4%
Other wholesalers	1.8%	1.4%	2.0%	2.0%	.9%	1.4%	1.5%	2.1%	1.5%	3.5%
Export	.8%	.3%	1.8%	.3%	.1%	1.1%	.2%	1.0%	.2%	2.7%
Others	.6%	2.5%	.3%	.4%	.1%	.6%	.6%	2.5%	.2%	1.1%

Data for all types of electrical wholesalers

MARKET MIX

The products distributors sell have a variety of end uses

	NATION	NEW ENGLAND	MIDDLE ATLANTIC	EAST NORTH CENTRAL	WEST NORTH CENTRAL	SOUTH ATLANTIC	EAST SOUTH CENTRAL	WEST SOUTH CENTRAL	MOUNTAIN	PACIFIC
Residential new construction	16.7%	16.1%	11.4%	5.5%	20.4%	19.2%	21.5%	9.8%	23.6%	19.1%
Industrial new construction	13.6%	19.0%	10.5%	11.5%	11.5%	16.1%	17.1%	11.5%	8.5%	9.0%
Commercial/ office new construction	14.5%	18.0%	16.2%	9.6%	15.6%	17.0%	19.2%	13.0%	17.5%	15.1%
Industrial maintenance and repair supplies	20.3%	18.9%	20.4%	28.8%	11.6%	21.4%	16.0%	21.4%	15.5%	13.6%
Commercial/ institutional customers	5.6%	8.4%	7.3%	5.7%	6.6%	5.0%	6.2%	5.5%	6.9%	3.1%
Industrial or commercial renovation/retrofit	7.2%	8.0%	9.1%	9.8%	5.3%	6.4%	6.2%	8.4%	6.8%	8.8%
OEMs (for use in the products they make)	7.1%	4.0%	8.5%	17.3%	5.1%	3.9%	1.0%	7.0%	2.0%	10.9%
Utilities	5.0%	.8%	2.5%	1.9%	14.4%	2.2%	5.2%	14.4%	5.0%	1.6%
Government	2.3%	.8%	2.5%	3.1%	2.4%	3.0%	2.3%	1.3%	3.8%	2.3%
Retailers (for resale)	2.2%	1.0%	1.7%	3.3%	1.4%	.5%	1.8%	1.4%	3.4%	12.4%
Export	1.0%	†	4.1%	.6%	.3%	.5%	†	2.9%	.6%	.5%
Retail trade/lighting showroom/ D-I-Y supplies	3.2%	4.4%	4.8%	1.5%	3.0%	3.4%	1.7%	1.4%	6.4%	2.6%
Other wholesalers	1.0%	.5%	.9%	.8%	1.0%	.9%	1.8%	1.6%	1.3%	.6%
Other	.5%	.1%	.1%	.4%	1.4%	.7%	†	.2%	.1%	.4%

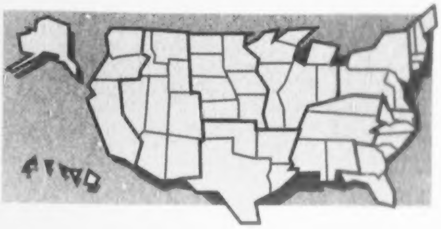
Data for full-line electrical wholesalers only

† Less than .1%

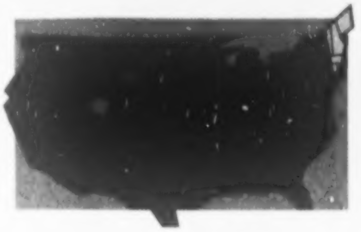
NOTES

A—sales figures for Pawtucket, R.I., are combined with those for Providence
B—sales figures for Ft. Worth-Arlington, Tex., are combined with those for Dallas
C—sales figures for Boulder-Longmont, Colo., are combined with those for Denver
D—sales figures for Oakland, Calif., are combined with those for San Francisco

NA—no data available on 5063 from which to make estimates
NR—not reported
EC—electrical contractor employees
M—manufacturing employees
F/S/RT—employment in finance, insurance, real estate, services and retail trade
G—government employees
Sales given in millions of dollars



NATION



NEW ENGLAND

CONNECTICUT
MAINE
MASSACHUSETTS
NEW HAMPSHIRE
RHODE ISLAND
VERMONT

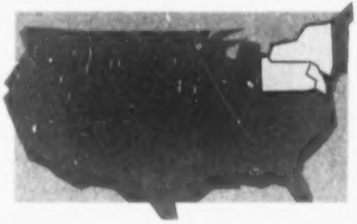
ELECTRICAL WHOLESALERS' SALES EMPLOYMENT 1989

Nation

	EW estimates			EW forecasts			in thousands		
	1986	1987	1988	1989	1990	EC	M	F/S/RT	G
NEW ENGLAND	$1,922.9	$2,087.1	$2,344.8	$2,529.0	$2,679.4	30,900	1,331.9	3,434.6	892.3
MIDDLE ATLANTIC	5,673.6	6,195.8	6,867.6	7,513.1	8,098.7	87,905	2,906.9	8,618.2	2,734.9
EAST NORTH CENTRAL	5,815.1	6,117.8	7,055.6	8,035.8	8,588.0	76,171	4,231.8	8,676.2	2,816.6
WEST NORTH CENTRAL	2,190.4	2,299.6	2,526.8	2,825.8	3,001.3	28,963	1,394.4	4,319.2	1,418.6
SOUTH ATLANTIC	6,315.6	6,873.3	7,521.9	8,447.2	9,020.9	113,322	3,166.3	8,524.0	3,513.8
EAST SOUTH CENTRAL	1,694.8	1,814.6	2,048.4	2,193.8	2,352.2	23,925	1,419.9	2,464.4	1,096.2
WEST SOUTH CENTRAL	4,023.4	4,119.3	4,569.5	4,933.0	5,244.2	45,316	1,537.4	4,764.7	1,955.9
MOUNTAIN	1,402.8	1,389.9	1,496.0	1,634.2	1,698.2	24,519	638.7	2,909.2	1,108.6
PACIFIC	4,945.9	5,153.7	5,732.9	6,459.7	6,883.5	74,897	2,766.1	8,056.8	2,810.0
NATION	**33,984.4**	**36,051.1**	**40,163.4**	**44,571.4**	**47,566.5**	**505,918**	**19,393.4**	**51,767.3**	**18,346.9**

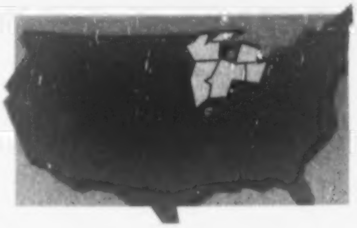
New England

	EW estimates			EW forecasts			in thousands		
	1986	1987	1988	1989	1990	EC	M	F/S/RT	G
NEW ENGLAND	**$1,922.9**	**$2,087.1**	**$2,344.8**	**$2,529.0**	**$2,679.4**	**30,900**	**1,331.9**	**3,434.6**	**892.3**
CONNECTICUT	**590.1**	**654.4**	**739.9**	**827.4**	**902.8**	**6,799**	**370.8**	**866.8**	**212.9**
BRIDGEPORT	95.1	105.5	119.3	133.4	147.2	827	56.2	99.0	20.0
HARTFORD	206.6	223.6	256.3	292.4	319.1	1,883	89.4	271.3	63.4
NEW BRITAIN	NA	NA	NA	NA	NA	414	19.0	29.5	6.8
NEW HAVEN-WEST HAVEN	62.0	68.7	77.7	86.9	94.8	1,293	47.4	135.9	32.6
STAMFORD	41.2	45.7	51.7	57.8	63.1	493	21.8	74.8	10.8
WATERBURY	NA	NA	NA	NA	NA	449	23.5	39.8	12.9
MAINE	**149.3**	**163.6**	**184.1**	**203.9**	**215.9**	**2,135**	**105.6**	**239.7**	**95.1**
LEWISTON-AUBURN	NA	NA	NA	NA	NA	139	10.1	21.2	4.0
PORTLAND	NA	NA	NA	NA	NA	586	17.4	73.5	17.0
MASSACHUSETTS	**926.0**	**995.3**	**1,119.5**	**1,173.1**	**1,224.2**	**16,422**	**575.9**	**1,721.0**	**409.3**
BOSTON	667.6	733.1	833.6	913.0	973.0	8,670	267.5	1,049.3	208.9
BROCKTON	NA	NA	NA	NA	NA	518	11.1	37.4	12.4
FALL RIVER	NA	NA	NA	NA	NA	425	15.1	25.6	7.1
FITCHBURG-LEOMINSTER	NA	NA	NA	NA	NA	334	12.3	18.6	4.9
LAWRENCE-HAVERHILL	NA	NA	NA	NA	NA	932	47.3	74.0	21.8
LOWELL	NA	NA	NA	NA	NA	724	36.1	44.4	13.7
NEW BEDFORD	NA	NA	NA	NA	NA	460	18.1	30.0	10.6
PITTSFIELD	NA	NA	NA	NA	NA	NA	10.9	21.0	4.9
SPRINGFIELD	66.1	71.0	82.8	84.9	89.3	1,288	50.3	124.0	38.1
WORCESTER	71.0	78.1	87.8	92.1	96.1	1,254	45.8	110.8	25.4
NEW HAMPSHIRE	**89.7**	**96.8**	**107.4**	**109.8**	**114.0**	**2,235**	**117.4**	**261.8**	**72.1**
MANCHESTER	NA	NA	NA	NA	NA	403	11.5	49.2	9.1
NASHUA	NA	NA	NA	NA	NA	293	35.9	40.0	7.4
PORTSMOUTH-DOVER-ROCHESTER, N.H.-ME.	NA	NA	NA	NA	NA	371	20.5	51.9	26.0



MIDDLE ATLANTIC

NEW JERSEY
NEW YORK
PENNSYLVANIA



EAST NORTH CENTRAL

ILLINOIS
INDIANA
MICHIGAN
OHIO
WISCONSIN

New England-continued

	EW estimates			EW forecasts			in thousands		
	1986	1987	1988	1989	1990	EC	M	F/S/RT	G
RHODE ISLAND	**102.8**	**99.3**	**106.2**	**117.7**	**119.9**	**2,070**	**113.3**	**224.4**	**60.5**
PAWTUCKET-WOONSOCKET-ATTLEBORO	A	A	A	A	A	626	49.5	54.5	10.3
PROVIDENCE	105.9	102.2	109.4	120.4	122.6	1,558	70.6	164.9	45.0
VERMONT	**64.8**	**77.8**	**87.6**	**97.0**	**102.7**	**1,239**	**48.9**	**120.8**	**42.4**
BARRE-MONTPELIER	NA	NA	NA	NA	NA	127	5.0	17.1	8.3
BURLINGTON	NA	NA	NA	NA	NA	302	16.1	37.1	12.4

Middle Atlantic

	EW estimates			EW forecasts			in thousands		
	1986	1987	1988	1989	1990	EC	M	F/S/RT	G
MIDDLE ATLANTIC	**$5,673.6**	**$6,195.8**	**$6,867.6**	**$7,513.1**	**$8,098.7**	**87,905**	**2,906.9**	**8,618.2**	**2,734.9**
NEW JERSEY	**1,543.3**	**1,708.5**	**1,879.1**	**1,949.1**	**2,053.8**	**19,844**	**661.2**	**1,766.7**	**560.6**
ATLANTIC CITY	NA	NA	NA	NA	NA	659	8.5	110.4	25.3
BERGEN-PASSAIC	NA	NA	NA	NA	NA	2,998	156.3	334.4	70.7
CAMDEN	NA	NA	NA	NA	NA	2,170	72.5	215.2	73.9
JERSEY CITY	88.7	98.2	108.0	112.0	118.0	1,316	45.5	93.3	41.6
MIDDLESEX-SOMERSET-HUNTERDON	335.0	373.2	410.5	425.7	448.6	2,975	116.2	235.8	74.5
MONMOUTH-OCEAN	65.5	72.6	79.8	82.8	87.3	2,034	29.5	174.9	63.4
NEWARK	439.8	472.6	519.8	539.1	568.1	6,244	171.8	462.8	140.4
TRENTON	NA	NA	NA	NA	NA	485	30.8	90.9	55.6
VINELAND-MILLVILLE-BRIDGETON	NA	NA	NA	NA	NA	879	15.3	22.9	11.9
NEW YORK	**2,743.2**	**2,969.8**	**3,261.9**	**3,637.1**	**3,937.0**	**46,481**	**1,192.0**	**4,309.0**	**1,468.4**
ALBANY-SCHENECTADY-TROY	86.2	104.0	115.4	133.9	152.7	1,671	47.6	194.6	114.1
BINGHAMTON	NA	NA	NA	NA	NA	756	36.5	46.7	21.8
BUFFALO	165.2	176.3	193.6	215.9	233.7	1,476	77.3	235.5	75.3
ELMIRA	NA	NA	NA	NA	NA	197	9.2	19.0	7.1
NASSAU-SUFFOLK	717.1	776.3	822.9	896.9	959.7	5,881	164.2	595.9	187.5
NEW YORK	1,410.7	1,510.4	1,733.9	1,976.7	2,174.4	24,598	357.7	2,060.9	606.0
NIAGARA FALLS	NA	NA	NA	NA	NA	190	23.7	33.6	13.3
ORANGE COUNTY	NA	NA	NA	NA	NA	654	15.3	47.4	23.6
POUGHKEEPSIE	NA	NA	NA	NA	NA	649	30.0	49.1	24.6
ROCHESTER	153.0	178.3	195.8	218.4	236.4	1,962	137.9	215.9	69.1
ROCKLAND COUNTY	NA	NA	NA	NA	NA	626	15.4	47.9	21.3
SYRACUSE	123.1	143.1	157.2	175.3	189.7	1,435	54.1	152.3	52.5
UTICA-ROME	NA	NA	NA	NA	NA	197	25.0	55.7	30.9
WESTCHESTER COUNTY	NA	NA	NA	NA	NA	3,013	62.0	215.7	57.4
PENNSYLVANIA	**1,387.1**	**1,517.4**	**1,726.6**	**1,926.9**	**2,107.9**	**21,579**	**1,053.7**	**2,542.5**	**705.9**
ALLENTOWN-BETHLEHEM	75.1	82.1	93.4	104.3	114.0	1,417	77.0	132.5	31.1

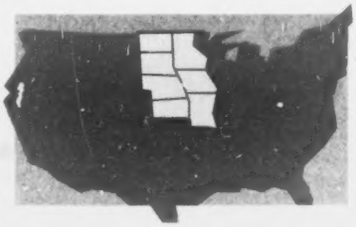
Middle Atlantic-continued

	EW estimates			EW forecasts		in thousands			
	1986	1987	1988	1989	1990	EC	M	F/S/RT	G
ALTOONA	NA	NA	NA	NA	NA	280	10.9	23.5	7.3
BEAVER COUNTY	NA	NA	NA	NA	NA	26	9.3	22.8	8.1
ERIE	NA	NA	NA	NA	NA	293	35.7	53.0	14.3
HARRISBURG-LEBANON-CARLISLE	34.3	42.3	48.1	53.7	58.8	842	51.4	138.1	66.9
JOHNSTOWN	NA	NA	NA	NA	NA	176	13.8	38.1	13.2
LANCASTER	40.0	43.8	49.8	55.6	60.8	1,841	59.3	83.0	16.3
PHILADELPHIA	793.8	837.2	913.9	1,012.9	1,132.3	9,948	363.6	1,166.8	303.2
PITTSBURGH	246.1	270.2	302.6	326.8	358.9	4,098	126.6	503.1	108.9
READING	NA	NA	NA	NA	NA	581	48.7	65.5	17.4
SCRANTON-WILKES-BARRE	NA	NA	NA	NA	NA	1,549	71.9	140.1	42.4
WILLIAMSPORT	NA	NA	NA	NA	NA	161	16.2	21.6	7.1
YORK	41.6	45.5	51.8	57.8	63.2	595	62.0	70.4	18.9

East North Central

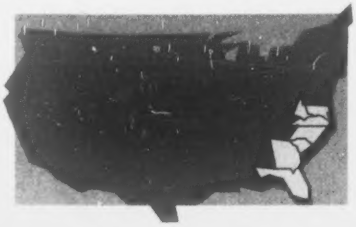
	EW estimates			EW forecasts		in thousands			
	1986	1987	1988	1989	1990	EC	M	F/S/RT	G
EAST NORTH CENTRAL	**$5,815.1**	**$6,117.8**	**$7,055.6**	**$8,035.8**	**$8,588.0**	**76,171**	**4,231.8**	**8,676.2**	**2,816.6**
ILLINOIS	**1,593.0**	**1,730.8**	**2,022.7**	**2,394.9**	**2,588.0**	**23,348**	**981.0**	**2,540.0**	**735.9**
AURORA-ELGIN	NA	NA	NA	NA	NA	683	38.3	70.9	16.0
BLOOMINGTON-NORMAL	NA	NA	NA	NA	NA	178	8.1	32.9	13.3
CHAMPAIGN-URBANA-RANTOUL	NA	NA	NA	NA	NA	198	9.0	34.9	35.4
CHICAGO	1,264.0	1,346.0	1,553.8	1,862.6	2,047.1	17,829	564.7	1,651.5	372.9
DAVENPORT-ROCK ISLAND-MOLINE	41.5	45.4	53.1	62.8	67.9	488	32.8	72.1	27.2
DECATUR	NA	NA	NA	NA	NA	343	13.7	22.1	5.7
JOLIET	NA	NA	NA	NA	NA	702	19.4	42.4	17.4
KANKAKEE	NA	NA	NA	NA	NA	108	5.6	16.8	6.7
LAKE COUNTY	NA	NA	NA	NA	NA	1,144	44.4	93.6	32.2
PEORIA	48.4	52.6	61.5	72.8	78.7	436	35.6	68.0	16.4
ROCKFORD	48.4	52.6	61.5	72.8	78.7	327	45.6	55.7	11.9
SPRINGFIELD	NA	NA	NA	NA	NA	361	3.6	49.8	33.1
INDIANA	**740.4**	**785.9**	**935.8**	**1,090.1**	**1,218.4**	**10,959**	**637.1**	**1,078.5**	**373.7**
ANDERSON	NA	NA	NA	NA	NA	134	17.1	21.0	6.5
BLOOMINGTON	NA	NA	NA	NA	NA	253	10.6	21.4	17.7
ELKHART-GOSHEN	NA	NA	NA	NA	NA	184	58.0	32.4	6.0
EVANSVILLE	60.8	64.5	76.8	89.5	100.0	834	31.7	63.9	13.1
FT. WAYNE	52.0	55.2	65.7	76.6	85.6	767	53.5	89.3	18.6
GARY-HAMMOND	54.4	57.7	68.7	80.0	89.5	1,879	57.2	106.2	32.4
INDIANAPOLIS	242.4	269.3	320.7	373.6	417.5	3,213	106.9	323.1	97.6
LAFAYETTE-WEST LAFAYETTE	NA	NA	NA	NA	NA	265	12.4	25.4	17.9
MUNCIE	NA	NA	NA	NA	NA	282	11.2	23.2	11.6
SOUTH BEND--MISHAWAKA	NA	NA	NA	NA	NA	820	23.3	65.4	11.9
TERRE HAUTE	NA	NA	NA	NA	NA	185	10.1	25.6	10.0
MICHIGAN	**1,269.0**	**1,196.9**	**1,376.2**	**1,504.5**	**1,548.7**	**16,398**	**952.3**	**1,773.6**	**645.3**
ANN ARBOR	NA	NA	NA	NA	NA	518	38.8	69.6	50.6
BATTLE CREEK	NA	NA	NA	NA	NA	115	15.4	25.0	12.1
BENTON HARBOR	NA	NA	NA	NA	NA	180	22.4	28.9	8.9
DETROIT	710.1	670.7	715.9	808.5	847.1	8,383	468.2	952.6	255.5
FLINT	NA	NA	NA	NA	NA	532	51.3	73.7	23.9
GRAND RAPIDS	115.8	109.2	125.6	137.3	141.3	1,815	99.9	151.5	33.4
JACKSON	NA	NA	NA	NA	NA	168	14.0	21.5	10.3
KALAMAZOO	NA	NA	NA	NA	NA	521	30.6	49.8	16.1

WEST NORTH CENTRAL



IOWA
KANSAS
MINNESOTA
MISSOURI
NEBRASKA
NORTH DAKOTA
SOUTH DAKOTA

SOUTH ATLANTIC



DELAWARE
DISTRICT OF COLUMBIA
FLORIDA
GEORGIA
MARYLAND
NORTH CAROLINA
SOUTH CAROLINA
VIRGINIA
WEST VIRGINIA

East North Central-continued

	EW estimates			EW forecasts		in thousands			
	1986	1987	1988	1989	1990	EC	M	F/S/RT	G
LANSING-EAST LANSING	51.9	49.0	56.3	61.6	63.4	710	32.5	91.3	70.4
MUSKEGON	NA	NA	NA	NA	NA	345	16.4	24.1	9.3
SAGINAW-BAY CITY-MIDLAND	NA	NA	NA	NA	NA	638	43.4	70.2	21.4
OHIO	**1,812.8**	**1,965.9**	**2,203.2**	**2,448.7**	**2,599.9**	**18,261**	**1,107.9**	**2,271.4**	**718.7**
AKRON	82.7	89.7	100.5	111.7	118.6	694	66.0	127.6	46.2
CANTON	NA	NA	NA	NA	NA	634	45.8	75.7	21.1
CINCINNATI	283.2	312.6	350.3	389.4	413.4	2,862	146.4	363.1	92.0
CLEVELAND	581.2	615.6	689.9	766.8	814.1	3,050	204.9	463.9	117.5
COLUMBUS	300.6	360.7	404.2	449.3	477.0	3,068	102.9	365.7	127.6
DAYTON-SPRINGFIELD	125.3	135.9	152.3	169.3	179.7	1,710	104.7	209.8	76.5
TOLEDO	118.5	128.5	144.0	160.1	169.9	1,641	61.4	146.3	45.2
YOUNGSTOWN-WARREN	77.8	84.4	94.6	105.1	111.6	622	50.1	98.2	24.9
WISCONSIN	**400.0**	**438.4**	**517.7**	**597.7**	**633.1**	**7,205**	**553.5**	**1,012.7**	**343.0**
APPLETON-OSHKOSH	NA	NA	NA	NA	NA	906	52.5	62.8	17.7
EAU CLAIRE	NA	NA	NA	NA	NA	139	11.8	27.1	11.5
GREEN BAY	NA	NA	NA	NA	NA	291	25.4	45.4	11.4
JANESVILLE-BELOIT	NA	NA	NA	NA	NA	196	17.3	25.5	7.5
KENOSHA	NA	NA	NA	NA	NA	179	13.3	17.8	6.5
LA CROSSE	NA	NA	NA	NA	NA	120	10.7	30.5	8.3
MADISON	41.2	45.2	53.4	61.6	66.9	470	24.9	101.9	59.1
MILWAUKEE	183.3	204.2	229.9	251.2	260.3	2,492	176.5	372.0	84.5
RACINE	NA	NA	NA	NA	NA	230	26.3	32.2	8.5
WAUSAU	NA	NA	NA	NA	NA	216	14.1	22.3	6.4

West North Central

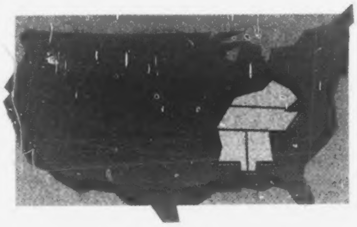
	EW estimates			EW forecasts		in thousands			
	1986	1987	1988	1989	1990	EC	M	F/S/RT	G
WEST NORTH CENTRAL	**$2,190.4**	**$2,299.6**	**$2,526.8**	**$2,825.8**	**$3,001.3**	**28,963**	**1,394.4**	**4,319.2**	**1,418.6**
IOWA	**255.9**	**280.2**	**315.1**	**354.6**	**371.4**	**3,408**	**233.8**	**563.9**	**221.1**
CEDAR RAPIDS	NA	NA	NA	NA	NA	308	23.7	43.1	10.2
DES MOINES	68.6	75.2	84.0	94.6	98.2	495	26.3	127.1	30.8
DUBUQUE	NA	NA	NA	NA	NA	80	12.4	21.4	3.4
SIOUX CITY	NA	NA	NA	NA	NA	112	10.5	27.3	6.6
WATERLOO-CEDAR FALLS	NA	NA	NA	NA	NA	144	15.4	29.2	13.1
KANSAS	**518.2**	**556.0**	**577.8**	**634.0**	**671.7**	**3,147**	**185.0**	**471.8**	**217.1**
TOPEKA	NA	NA	NA	NA	NA	198	9.3	43.7	22.6
WICHITA	78.3	84.1	87.4	95.9	101.6	974	63.9	110.5	30.6
MINNESOTA	**489.8**	**521.0**	**596.4**	**690.0**	**745.1**	**8,203**	**397.2**	**1,019.0**	**341.6**
DULUTH	NA	NA	NA	NA	NA	229	8.1	42.6	22.8
MINNEAPOLIS-ST. PAUL	305.6	324.0	370.9	429.1	463.4	5,685	267.4	681.6	186.1

West North Central-continued

	EW estimates			EW forecasts			in thousands		
	1986	1987	1988	1989	1990	EC	M	F/S/RT	G
ROCHESTER	NA	NA	NA	NA	NA	186	11.3	37.3	6.6
ST. CLOUD	NA	NA	NA	NA	NA	258	13.5	34.9	13.6
MISSOURI	**614.2**	**608.5**	**652.6**	**711.0**	**737.9**	**8,592**	**434.3**	**1,070.4**	**367.9**
KANSAS CITY	540.9	535.8	577.6	629.2	653.1	2,820	110.2	379.0	119.2
ST. LOUIS	359.6	345.2	373.2	404.1	430.8	5,004	226.9	582.5	143.7
SPRINGFIELD	27.3	27.0	29.0	31.5	32.7	409	21.2	57.6	15.0
NEBRASKA	**137.5**	**149.2**	**174.2**	**196.8**	**215.2**	**4,119**	**97.7**	**346.0**	**142.4**
LINCOLN	NA	NA	NA	NA	NA	1,990	15.1	56.2	32.0
OMAHA	74.4	80.7	94.2	106.5	116.4	1,058	35.4	176.8	47.4
NORTH DAKOTA	**111.3**	**119.0**	**139.0**	**155.7**	**164.2**	**898**	**16.1**	**126.0**	**67.1**
BISMARCK	NA	NA	NA	NA	NA	112	2.2	20.3	8.8
FARGO-MOORHEAD	NA	NA	NA	NA	NA	439	5.1	41.1	14.7
GRAND FORKS	NA	NA	NA	NA	NA	85	1.7	14.2	9.7
SOUTH DAKOTA	**63.4**	**65.7**	**71.7**	**83.6**	**95.6**	**597**	**30.3**	**722.2**	**61.4**
RAPID CITY	NA	NA	NA	NA	NA	82	3.2	18.2	7.5
SIOUX FALLS	NA	NA	NA	NA	NA	184	8.1	39.9	7.7

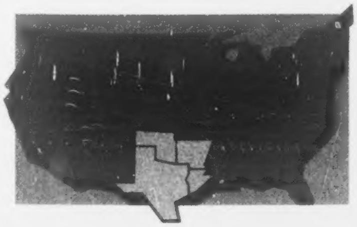
South Atlantic

	EW estimates			EW forecasts			in thousands		
	1986	1987	1988	1989	1990	EC	M	F/S/RT	G
SOUTH ATLANTIC	**$6,315.6**	**$6,873.3**	**$7,521.9**	**$8,447.2**	**$9,020.9**	**113,322**	**3,166.3**	**8,524.0**	**3,513.8**
DELAWARE	**88.5**	**99.0**	**121.1**	**127.0**	**127.5**	**2,041**	**71.8**	**168.6**	**48.5**
WILMINGTON	52.5	59.9	73.3	76.9	77.2	1,577	61.2	142.5	38.8
D.C.	**263.2**	**285.9**	**317.6**	**348.2**	**370.2**	**461**	**16.1**	**342.9**	**275.6**
WASHINGTON, D.C.-MD.-VA.	789.8	870.9	967.2	1,060.4	1,127.5	12,847	86.6	1,229.5	587.1
FLORIDA	**2,092.6**	**2,195.5**	**2,315.0**	**2,745.5**	**2,908.1**	**35,598**	**545.9**	**2,120.4**	**819.1**
DAYTONA BEACH	NA	NA	NA	NA	NA	813	12.0	46.8	20.3
FT. LAUDERDALE-HOLLYWOOD-POMPANO BEACH	207.5	217.7	229.5	272.2	288.4	4,725	46.9	202.8	65.0
FT. MYERS-CAPE CORAL	NA	NA	NA	NA	NA	1,116	6.6	54.6	18.3
JACKSONVILLE	123.0	129.0	136.0	161.3	170.9	3,498	39.2	167.6	61.5
MELBOURNE-TITUSVILLE-PALM BAY	NA	NA	NA	NA	NA	988	30.3	60.9	21.8
MIAMI-HIALEAH	919.1	964.3	1,016.8	1,205.9	1,277.3	3,834	93.1	343.7	120.3
ORLANDO	193.7	223.0	235.1	278.9	295.4	3,811	56.8	232.1	60.3
PENSACOLA	NA	NA	NA	NA	NA	975	11.3	44.6	30.0
SARASOTA	NA	NA	NA	NA	NA	750	8.9	51.5	14.3
TALLAHASSEE	NA	NA	NA	NA	NA	507	4.9	33.5	50.1
TAMPA-ST. PETERSBURG-CLEARWATER	476.8	500.2	527.4	625.5	662.5	5,652	97.6	362.2	109.0
WEST PALM BEACH-BOCA RATON-DELRAY BEACH	136.7	143.4	151.2	179.3	189.9	2,884	34.0	163.3	46.9
GEORGIA	**994.4**	**1,105.2**	**1,218.8**	**1,290.9**	**1,326.9**	**14,847**	**565.5**	**1,291.2**	**515.9**
ATHENS	NA	NA	NA	NA	NA	55	15.1	22.5	20.1
ATLANTA	657.4	696.0	767.5	812.9	835.6	9,983	176.5	716.0	210.5
AUGUSTA	NA	NA	NA	NA	NA	600	36.2	63.4	33.9
COLUMBUS	NA	NA	NA	NA	NA	517	21.1	38.6	20.8
MACON-WARNER ROBINS	NA	NA	NA	NA	NA	481	18.6	51.4	34.4
SAVANNAH	NA	NA	NA	NA	NA	523	17.6	47.7	16.5



EAST
SOUTH CENTRAL

ALABAMA
KENTUCKY
MISSISSIPPI
TENNESSEE



WEST
SOUTH CENTRAL

ARKANSAS
LOUISIANA
OKLAHOMA
TEXAS

South Atlantic-continued

	EW estimates			EW forecasts		in thousands			
	1986	1987	1988	1989	1990	EC	M	F/S/RT	G
MARYLAND	**620.0**	**712.3**	**805.4**	**957.3**	**1,093.3**	**15,269**	**205.5**	**1,138.4**	**416.9**
BALTIMORE	336.6	386.8	437.3	519.8	593.7	7,422	129.7	592.5	213.0
NORTH CAROLINA	**857.5**	**973.6**	**1,131.1**	**1,235.3**	**1,320.1**	**15,786**	**866.1**	**1,190.6**	**468.7**
ASHEVILLE	NA	NA	NA	NA	NA	931	19.1	37.9	12.4
CHARLOTTE-GASTONIA	232.2	278.7	326.4	365.9	400.7	2,755	155.2	242.2	66.3
GREENSBORO-WINSTON SALEM-HIGH POINT	154.4	175.3	203.7	222.4	237.7	1,144	150.4	194.8	55.7
RALEIGH-DURHAM	113.3	128.6	149.4	163.2	174.4	2,124	61.5	189.8	89.8
SOUTH CAROLINA	**355.0**	**410.9**	**424.3**	**447.9**	**487.2**	**10,472**	**383.6**	**616.2**	**275.6**
CHARLESTON	66.0	76.5	79.0	83.4	90.7	1,365	21.6	87.3	53.6
COLUMBIA	70.6	69.0	71.2	75.2	81.8	1,853	30.3	104.1	65.5
GREENVILLE-SPARTANBURG	112.4	135.6	140.0	147.8	160.8	5,297	102.4	126.6	43.1
VIRGINIA	**891.5**	**930.6**	**1,019.9**	**1,092.6**	**1,150.0**	**17,064**	**424.9**	**1,383.6**	**566.4**
BRISTOL	NA	NA	NA	NA	NA	134	10.9	13.0	5.4
CHARLOTTESVILLE	NA	NA	NA	NA	NA	234	8.6	27.6	23.1
DANVILLE	NA	NA	NA	NA	NA	171	16.7	15.1	5.3
LYNCHBURG	NA	NA	NA	NA	NA	321	22.7	32.0	9.4
NORFOLK-VIRGINIA BEACH-NEWPORT NEWS	168.3	175.7	192.6	206.3	217.1	3,388	67.3	276.4	131.0
NORTHERN VIRGINIA	NA	NA	NA	NA	NA	5,941	34.0	441.6	147.9
RICHMOND-PETERSBURG	203.6	212.6	233.0	249.6	262.7	3,316	61.7	219.3	96.4
ROANOKE	NA	NA	NA	NA	NA	1,329	19.6	61.9	15.4
WEST VIRGINIA	**152.9**	**160.1**	**168.8**	**202.4**	**237.6**	**1,783**	**86.9**	**271.9**	**127.1**
CHARLESTON	42.5	46.0	48.5	58.2	68.3	234	11.2	54.7	20.9
HUNTINGTON-ASHLAND	NA	NA	NA	NA	NA	276	20.3	48.0	18.9
PARKERSBURG-MARIETTA	NA	NA	NA	NA	NA	53	14.0	27.9	10.1
WHEELING	NA	NA	NA	NA	NA	78	7.4	31.4	9.6

East South Central

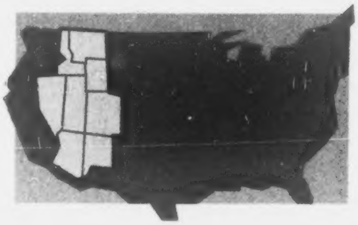
	EW estimates			EW forecasts		in thousands			
	1986	1987	1988	1989	1990	EC	M	F/S/RT	G
EAST SOUTH CENTRAL	**$1,694.8**	**$1,814.6**	**$2,048.4**	**$2,193.8**	**$2,352.2**	**23,925**	**1,419.9**	**2,464.4**	**1,096.2**
ALABAMA	**413.6**	**444.1**	**493.3**	**525.0**	**556.5**	**6,327**	**385.6**	**613.4**	**316.7**
BIRMINGHAM	140.8	162.3	180.3	191.9	203.4	2,309	58.5	190.5	62.8
HUNTSVILLE	NA	NA	NA	NA	NA	658	33.2	54.0	31.0
MOBILE	70.0	75.2	83.5	88.9	94.2	746	24.9	79.4	29.1
MONTGOMERY	NA	NA	NA	NA	NA	498	18.7	58.1	32.6
TUSCALOOSA	NA	NA	NA	NA	NA	317	10.2	20.6	20.8
KENTUCKY	**280.2**	**308.7**	**351.4**	**380.8**	**415.5**	**5,559**	**281.5**	**611.7**	**250.6**

■ East South Central-continued

	EW estimates			EW forecasts		in thousands			
	1986	1987	1988	1989	1990	EC	M	F/S/RT	G
LEXINGTON-FAYETTE	27.3	30.5	34.7	37.6	41.1	1,312	34.6	84.7	47.5
LOUISVILLE	90.4	101.0	114.9	124.6	135.9	1,836	87.1	226.5	63.3
OWENSBORO	NA	NA	NA	NA	NA	455	6.3	15.9	5.5
MISSISSIPPI	**194.2**	**187.8**	**211.4**	**224.2**	**234.9**	**2,584**	**242.6**	**336.4**	**201.2**
JACKSON	49.1	47.5	53.5	56.7	59.4	1,067	21.3	85.9	40.8
TENNESSEE	**806.8**	**874.0**	**992.3**	**1,063.8**	**1,145.2**	**9,456**	**510.2**	**902.9**	**327.7**
CHATTANOOGA	94.6	102.5	116.4	124.8	134.3	1,482	47.6	85.4	35.1
JOHNSON CITY-KINGSPORT-BRISTOL	59.8	64.8	73.6	78.9	84.9	599	54.5	64.4	23.9
KNOXVILLE	94.6	102.1	115.9	124.3	133.8	986	52.3	117.2	49.2
MEMPHIS	309.7	335.5	380.9	408.4	439.6	2,157	54.5	212.6	72.7
NASHVILLE	171.1	185.4	210.5	225.7	242.9	3,067	90.9	235.4	70.1

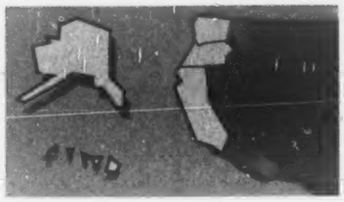
■ West South Central

	EW estimates			EW forecasts		in thousands			
	1986	1987	1988	1989	1990	EC	M	F/S/RT	G
WEST SOUTH CENTRAL	**$4,023.4**	**$4,119.3**	**$4,569.5**	**$4,933.0**	**$5,244.2**	**45,316**	**1,537.4**	**4,764.7**	**1,955.9**
ARKANSAS	**233.8**	**232.0**	**249.9**	**271.6**	**291.2**	**2,757**	**234.1**	**357.7**	**155.6**
FAYETTEVILLE-SPRINGDALE	NA	NA	NA	NA	NA	218	13.0	18.6	10.7
FT. SMITH	NA	NA	NA	NA	NA	161	25.9	30.7	8.3
LITTLE ROCK-N. LITTLE ROCK	141.2	146.1	157.4	171.0	183.4	829	35.3	114.1	47.5
PINE BLUFF	NA	NA	NA	NA	NA	113	6.5	13.5	7.5
LOUISIANA	**604.1**	**620.8**	**704.6**	**697.1**	**739.6**	**8,433**	**171.8**	**677.8**	**317.2**
ALEXANDRIA	NA	NA	NA	NA	NA	118	3.4	21.7	13.2
BATON ROUGE	66.0	67.8	77.0	76.1	80.8	2,494	19.5	99.4	54.3
HOUMA-THIBODAUX	NA	NA	NA	NA	NA	74	4.5	21.5	10.7
LAFAYETTE	42.2	43.4	49.3	48.7	51.7	625	6.8	39.2	12.7
MONROE	NA	NA	NA	NA	NA	308	7.1	26.2	11.4
NEW ORLEANS	242.2	248.9	282.5	279.5	296.5	2,972	43.6	268.7	87.2
SHREVEPORT	91.2	93.7	106.3	105.2	111.6	576	17.3	59.1	25.5
OKLAHOMA	**280.8**	**278.5**	**300.0**	**306.4**	**307.4**	**3,850**	**163.9**	**515.8**	**254.5**
ENID	NA	NA	NA	NA	NA	64	1.5	10.7	3.4
LAWTON	NA	NA	NA	NA	NA	83	3.7	13.9	11.9
OKLAHOMA CITY	106.3	105.4	113.5	115.9	116.3	1,365	49.4	191.8	98.8
TULSA	95.8	95.0	102.3	104.5	104.9	918	49.3	143.0	37.1
TEXAS	**2,904.6**	**2,987.9**	**3,314.9**	**3,657.9**	**3,906.0**	**30,276**	**967.6**	**3,213.3**	**1,228.6**
ABILENE	NA	NA	NA	NA	NA	288	5.0	25.0	9.1
AMARILLO	NA	NA	NA	NA	NA	258	9.0	36.8	13.6
AUSTIN	109.7	112.9	125.3	138.2	147.6	1,219	41.1	163.5	103.4
BEAUMONT-PORT ARTHUR	60.0	61.7	68.5	75.5	80.7	1,005	25.6	58.4	20.6
BRAZORIA	NA	NA	NA	NA	NA	2,023	16.0	18.3	11.6
BROWNSVILLE-HARLINGEN	NA	NA	NA	NA	NA	214	10.1	32.3	17.0
BRYAN-COLLEGE STATION	NA	NA	NA	NA	NA	215	3.5	18.5	22.3
CORPUS CHRISTI	73.2	75.3	83.5	92.2	98.4	816	11.5	57.8	28.1
DALLAS	1,047.3	919.7	1,020.3	1,125.9	1,202.3	5,947	221.5	708.4	153.7
EL PASO	92.6	95.2	105.6	116.5	124.5	588	40.0	80.3	41.6
FT. WORTH-ARLINGTON	B	B	B	B	B	2,579	121.1	246.8	69.9
GALVESTON-TEXAS CITY	NA	NA	NA	NA	NA	333	8.5	28.6	21.0
HOUSTON	980.3	1,225.1	1,418.6	1,565.4	1,671.6	6,841	157.4	732.8	196.0
KILLEEN-TEMPLE	NA	NA	NA	NA	NA	401	8.6	31.1	21.6
LAREDO	NA	NA	NA	NA	NA	69	1.9	16.0	9.8



MOUNTAIN

ARIZONA
COLORADO
IDAHO
MONTANA
NEVADA
NEW MEXICO
UTAH
WYOMING



PACIFIC

ALASKA
CALIFORNIA
HAWAII
OREGON
WASHINGTON

■ West South Central-continued

	EW estimates			EW forecasts			in thousands		
	1986	1987	1988	1989	1990	EC	M	F/S/RT	G
LONGVIEW-MARSHALL	NA	NA	NA	NA	NA	262	15.6	27.1	8.6
LUBBOCK	44.6	45.8	50.8	56.1	59.9	461	7.7	48.8	21.9
McALLEN-EDINBURG-MISSION	NA	NA	NA	NA	NA	376	13.9	41.1	25.9
MIDLAND	NA	NA	NA	NA	NA	217	2.4	18.8	6.6
ODESSA	NA	NA	NA	NA	NA	413	4.0	17.7	7.5
SAN ANGELO	NA	NA	NA	NA	NA	183	5.5	16.4	7.3
SAN ANTONIO	175.1	180.1	199.8	220.5	235.4	2,204	48.2	267.5	122.7
SHERMAN-DENISON	NA	NA	NA	NA	NA	344	11.1	15.7	4.4
TEXARKANA	NA	NA	NA	NA	NA	201	7.4	19.0	12.5
TYLER	NA	NA	NA	NA	NA	135	10.7	29.5	9.6
VICTORIA	NA	NA	NA	NA	NA	93	3.1	13.2	5.1
WACO	NA	NA	NA	NA	NA	309	15.3	39.5	12.9
WICHITA FALLS	NA	NA	NA	NA	NA	244	8.2	22.7	9.8

■ Mountain

	EW estimates			EW forecasts			in thousands		
	1986	1987	1988	1989	1990	EC	M	F/S/RT	G
MOUNTAIN	**$1,402.8**	**$1,389.9**	**$1,496.0**	**$1,634.2**	**$1,698.2**	**24,519**	**638.7**	**2,909.2**	**1,108.6**
ARIZONA	**333.3**	**331.8**	**340.7**	**353.1**	**363.2**	**6,979**	**189.5**	**749.9**	**255.6**
PHOENIX	228.4	231.0	237.2	245.8	252.8	5,067	138.9	509.0	130.2
TUCSON	77.2	76.9	78.9	81.8	84.2	1,160	29.0	130.2	55.8
COLORADO	**437.4**	**417.6**	**446.5**	**494.0**	**494.5**	**6,483**	**190.5**	**718.9**	**278.1**
BOULDER-LONGMONT	C	C	C	C	C	407	28.9	44.2	23.3
DENVER	349.4	335.5	354.9	401.3	429.9	3,680	95.6	417.1	130.0
IDAHO	**101.0**	**105.6**	**120.6**	**136.9**	**154.4**	**1,192**	**59.5**	**158.5**	**78.5**
BOISE CITY	NA	NA	NA	NA	NA	313	14.1	46.9	18.4
MONTANA	**48.9**	**47.0**	**50.1**	**52.5**	**52.8**	**886**	**21.1**	**138.3**	**72.0**
NEVADA	**118.7**	**118.5**	**129.7**	**143.9**	**150.2**	**3,518**	**26.3**	**367.6**	**72.1**
LAS VEGAS	NA	NA	NA	NA	NA	2,551	10.3	225.7	36.6
RENO	NA	NA	NA	NA	NA	678	9.0	90.9	17.7
NEW MEXICO	**136.9**	**132.7**	**145.3**	**161.2**	**168.3**	**2,441**	**40.7**	**266.8**	**145.3**
ALBUQUERQUE	53.7	52.1	57.0	63.3	66.1	1,333	20.5	131.8	48.0
LAS CRUCES	NA	NA	NA	NA	NA	151	3.6	15.9	17.2
SANTA FE	NA	NA	NA	NA	NA	176	1.6	25.8	22.5
UTAH	**155.0**	**152.3**	**170.6**	**190.1**	**207.9**	**2,298**	**102.0**	**316.1**	**150.6**
PROVO-OREM	NA	NA	NA	NA	NA	162	14.4	45.1	14.4
SALT LAKE CITY-OGDEN	98.7	97.0	108.7	121.1	132.4	1,670	66.0	120.8	97.7
WYOMING	**71.7**	**84.4**	**92.4**	**102.5**	**107.1**	**722**	**9.1**	**193.2**	**56.4**

Pacific

	EW estimates			EW forecasts		in thousands			
	1986	1987	1988	1989	1990	EC	M	F/S/RT	G
PACIFIC	**$4,945.9**	**$5,153.7**	**$5,732.9**	**$6,459.7**	**$6,883.5**	**74,898**	**2,766.1**	**8,056.8**	**2,810.0**
ALASKA	**90.7**	**93.9**	**98.1**	**112.2**	**115.6**	**746**	**14.0**	**88.7**	**68.5**
CALIFORNIA	**3,849.7**	**3,955.6**	**4,417.3**	**4,945.3**	**5,260.6**	**58,189**	**2,161.8**	**6,189.7**	**2,033.5**
ANAHEIM-SANTA ANA	491.5	505.0	563.9	631.4	671.6	7,576	257.7	604.8	124.3
BAKERSFIELD	48.5	49.9	55.7	62.4	66.4	1,190	10.4	68.9	42.5
FRESNO	93.6	96.2	107.4	120.3	127.9	972	22.3	101.1	49.6
LOS ANGELES-LONG BEACH	1,597.9	1,562.9	1,775.6	1,953.7	2,028.5	15,815	900.9	2,083.3	530.1
MODESTO	NA	NA	NA	NA	NA	592	23.8	49.6	19.1
OAKLAND	D	D	D	D	D	4,491	109.6	415.9	169.4
OXNORD-VENTURA	69.3	71.2	79.5	89.0	94.7	1,394	30.4	106.1	41.8
RIVERSIDE-SAN BERNARDINO	208.0	213.7	238.6	267.2	284.2	4,879	82.1	316.3	133.6
SACRAMENTO	88.4	90.8	101.4	113.5	120.8	2,690	42.0	280.4	181.4
SAN DIEGO	187.2	196.0	218.9	245.0	260.7	4,401	131.6	509.1	171.2
SAN FRANCISCO	686.7	682.1	758.4	789.1	816.7	3,731	80.5	560.6	139.5
SAN JOSE	264.1	271.4	303.1	339.3	360.9	3,770	273.7	367.6	88.2
SANTA BARBARA-LOMPOC-SANTA MARIA	NA	NA	NA	NA	NA	622	21.7	76.4	28.7
SANTA ROSA-PETALUMA	NA	NA	NA	NA	NA	477	19.7	62.2	24.1
STOCKTON	45.1	46.3	51.7	57.9	61.6	606	23.6	65.6	32.6
VALLEJO-FAIRFIELD-NAPA	NA	NA	NA	NA	NA	994	12.2	59.7	38.4
HAWAII	**65.6**	**69.0**	**73.4**	**82.5**	**90.7**	**2,046**	**22.1**	**246.2**	**103.5**
HONOLULU	45.7	48.1	51.2	57.5	63.3	1,596	16.6	152.2	86.8
OREGON	**446.7**	**507.1**	**561.7**	**642.7**	**673.3**	**4,254**	**210.9**	**576.7**	**220.7**
EUGENE-SPRINGFIELD	NA	NA	NA	NA	NA	347	20.6	53.4	24.5
PORTLAND	286.8	325.6	360.7	412.7	432.3	2,400	99.4	307.9	83.1
SALEM	NA	NA	NA	NA	NA	304	13.7	44.6	31.5
WASHINGTON	**493.3**	**528.2**	**582.4**	**677.0**	**743.4**	**9,663**	**357.3**	**955.5**	**383.8**
SEATTLE	283.4	303.4	334.6	388.9	427.0	5,062	213.4	481.7	141.6
SPOKANE	51.5	55.1	60.8	70.6	77.6	NR	NR	NR	NR
TACOMA	60.1	64.4	70.8	82.3	90.4	NR	NR	NR	NR

NOTES TO THE REGIONAL FACTBOOK TABLES

PRODUCT MIX source: ELECTRICAL WHOLESALING survey conducted in 1989.

CUSTOMER MIX source: ELECTRICAL WHOLESALING's *1984 Data Base Directory of Electrical Wholesale Distributors*.

MARKET MIX source: ELECTRICAL WHOLESALING survey conducted in 1985.

ELECTRICAL WHOLESALERS' SALES: All sales figures have been benchmarked to the *1982 Census of Wholesale Trade* data for merchant wholesalers of electrical apparatus and supplies, S.I.C. 5063. Sales figures for 1986, 1987 and 1988 represent ELECTRICAL WHOLESALING's best estimates and were derived from ELECTRICAL WHOLESALING surveys conducted in the following year. Sales forecasts for 1989 and 1990 are based on electrical wholesalers' forecasts, gathered in an ELECTRICAL WHOLESALING survey conducted in July 1989. All sales figures in this report are our estimates and should be taken as reasonable approximations rather than as absolute fact. NA—no data was available on 5063 from which to estimate sales.

EMPLOYMENT sources: *Employment and Earnings*, U.S. Department of Labor, Bureau of Labor Statistics; *County Business Patterns: 1986*, U.S. Department of Commerce, Bureau of the Census. Data for electrical contractors' employees and for employment in retail trade estimated by ELECTRICAL WHOLESALING. NR—not reported.

RECRUITING—continued

Score applicant on these questions, from 1 (lowest rating) to 3 (highest rating):

Describe your sales experience: What did you sell? Who were the customers? How were your results measured? How well did you do? 1 2 3

Explain your experiences working over the telephone with customers—order taking, follow-up, expediting. 1 2 3

What do you like most about working on the telephone? 1 2 3

What did you like least about telephone work? 1 2 3

Why do you prefer a telephone sales job over outside sales? 1 2 3

What experience have you had in the electrical distribution industry or with the types of customers you would be selling to? 1 2 3

Describe some specific instances when you have worked under pressure. 1 2 3

What makes you think you are good at selling? 1 2 3

What training would you want to help you be successful at this job? 1 2 3

What experience have you had with writing letters or other types of correspondence? 1 2 3

What experience have you had in maintaining files and keeping records? 1 2 3

Why do you think you should be hired for this job? 1 2 3

What are your salary requirements? ______________________

Names and telephone numbers of three business references and two personal references:

Overall evaluation (comments and total points assigned):

Required follow-up:
Send rejection letter: Yes _____ No _________
Schedule interview: Yes _____ No _________

Interview date: __________ Time: ___________

cal telephone interview takes 30 minutes to one hour. If the position is advertised outside the company, most respondents will prefer to schedule interviews at times, such as weekends and evenings, that don't conflict with their jobs. The recruiting checklist accompanying this article offers examples of some questions.

Recruiting new people to any company is probably the most vital among a manager's tasks because people are a company's most important asset. The right person will be able to help set up this telephone sales function. He or she will be flexible, willing to try new things and helpful in making necessary changes. The wrong person will only take up your time and possibly end up being terminated. The objective should be to recruit the best possible person for the job. How fast you do it isn't the issue. You have lived without telephone sales until now. You can continue living without it until you recruit the right individual who will fit into your company and be committed to achieving your objectives.

Keep in mind these "don'ts" when recruiting staff:

Don't give the job to someone who doesn't want it.

Don't give the job to someone who doesn't have the time to do it right.

Don't give the job to someone who isn't interested in learning about your products and customers.

Don't give the job to someone who thinks it will be easy.

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ECONOMIC UPDATE

CENTRAL STATES

IN THE MIDWESTERN STATES, 1989 LOOKS LIKE A GREAT YEAR.

■ Electrical distributors in the Midwestern states expect solidly positive results in 1989, following what was for most states there a good performance in 1987 and a great year in 1988. The East North Central Region, consisting of Illinois, Indiana, Michigan, Ohio and Wisconsin, was up 15.7% in 1988; and distributors there anticipate an increase of 13.2% in 1989. Those in the West North Central states of Iowa, Kansas, Minnesota, Missouri, Ne-

1989 SALES FORECASTS

The Central states

STATE	DISTRIBUTORS' FORECAST % CHANGE	EW SALES FORECAST ($millions)
ILLINOIS	+17.3%	$2,394.9
INDIANA	+15.4%	1,090.1
IOWA	+11.0%	354.6
KANSAS	+8.2%	634.0
MICHIGAN	+8.3%	1,504.5
MINNESOTA	S	690.0
MISSOURI	+7.4%	711.0
NEBRASKA	+11.5%	196.8
NORTH DAKOTA	S	155.7
OHIO	+10.1%	2,448.7
SOUTH DAKOTA	S	83.6
WISCONSIN	+14.3%	597.7

S—Insufficient returns

braska, North Dakota and South Dakota saw a 10.3% increase in 1988 and foresee 11.2% growth in 1989.

The East North Central Region contains some of the larger markets in the country for electrical products, namely Illinois (with $2.395 billion in distributor sales expected for 1989), Ohio (approximately the same size at $2.449 billion) and Michigan (with $1.504 billion). The West North Central Region, on the other hand, contains some of the smallest electrical product markets in the country, including South Dakota, North Dakota and Nebraska. All states, regardless of size, are anticipating positive growth for 1989.

Nationwide, electrical wholesalers forecast growth of 11.0% in 1989. If this prediction made in July of this year were to come true, it would mean that the industry will have experienced two years of fairly substantial growth rates. Sales in 1988 increased 11.4% for electrical distributors nationwide. ☐

ELECTRICAL
WHOLESALING

We welcome expression of opinion from readers. Address all correspondence to: The Editor, Electrical Wholesaling, 1221 Avenue of the Americas, New York, N.Y. 10020

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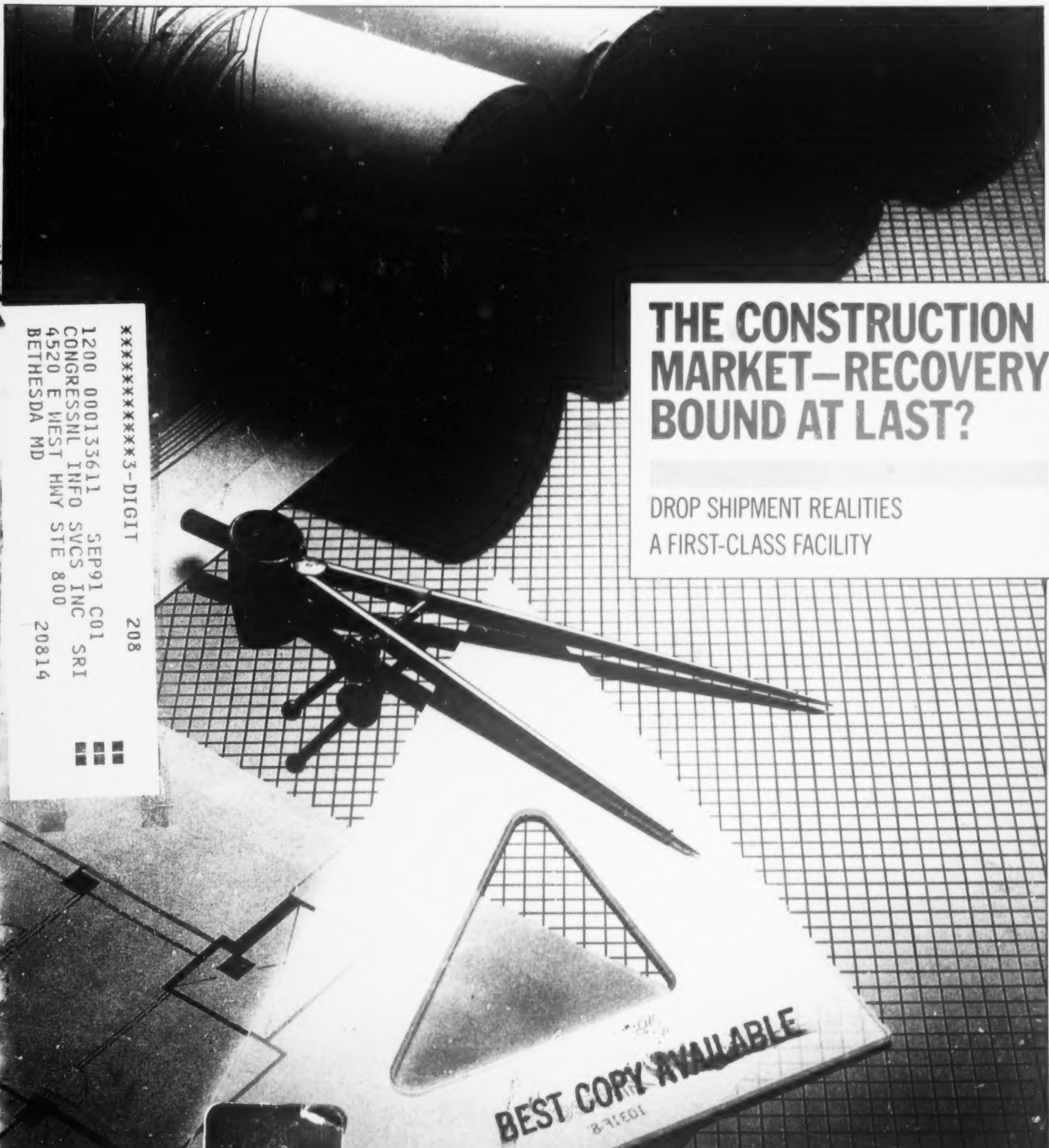

THE CONSTRUCTION MARKET—RECOVERY BOUND AT LAST?

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NUMBER 12

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DECEMBER
1989

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ELECTRICAL
WHOLESALING

THE PUBLISHER'S NOTE

George Christie

December is always a good time to reflect on the past year's events and to look ahead at what the coming year may bring. In this issue of ELECTRICAL WHOLESALING, we do a little of each—some reminiscing, some forecasting.

"Trends in the Making," on page 63, looks at the most significant trends in the electrical industry that started or gained momentum in 1989. These events may be harbingers of things to come in the 1990s.

For a look at the near-term future of the construction market, read "Forecast 1990," starting on page 45. The article is written by one of the leading construction industry experts in the U.S., George Christie of McGraw-Hill Information Systems Co.'s Economics Department. Christie, noted for his uncanny accuracy in predicting construction trends, discusses some recovery scenarios for 1990.

But that's not all. In this issue you can also read about changes in the 1990 National Electrical Code that offer sales opportunities for electrical distributors. And about a West Virginia distributor who has relocated his company to an expanded facility that positions it for the future.

The year ahead offers exciting challenges for us all. Here's to an enjoyable holiday season with family and friends and a healthy and profitable new year and decade.

John G. Behmke

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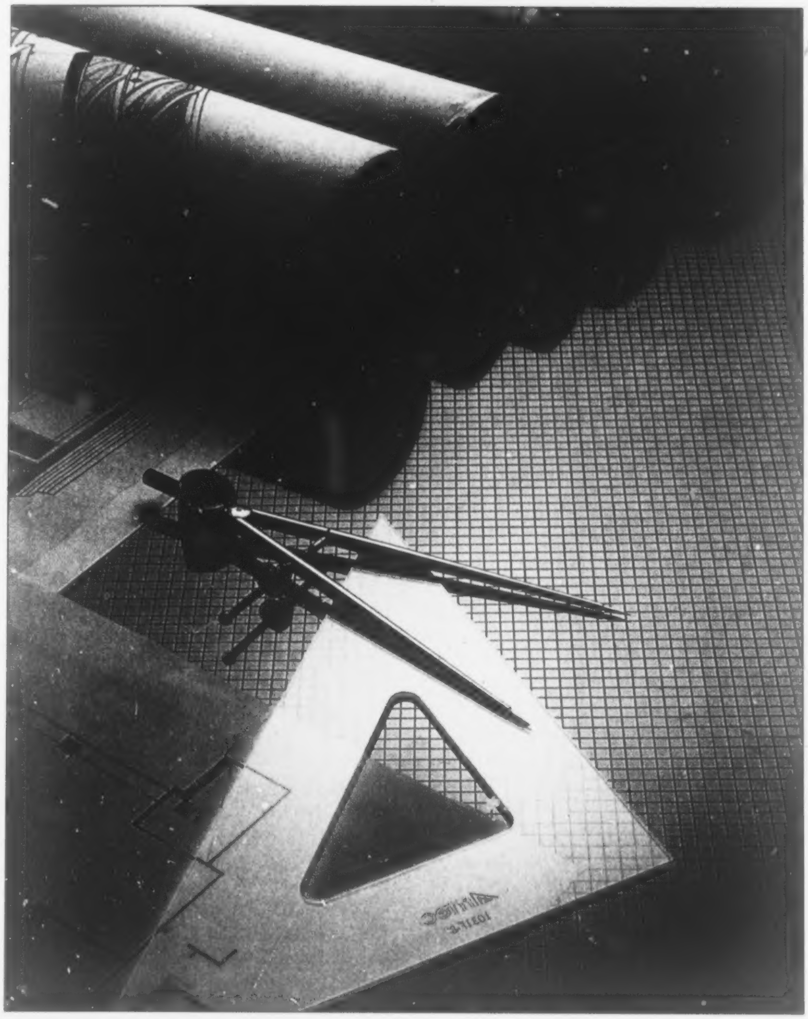
COVER STORY

FORECAST 1990



COMSTOCK INC. MICHAEL STUCKEY

THE 1990 DODGE/SWEET'S CONSTRUCTION OUTLOOK SHOWS A SLIGHTLY BRIGHTER PICTURE FOR 1990 THAN FOR 1989, DUE MAINLY TO HOME BUILDING.

■ Considering its wobbly beginning, 1989 construction contracting is coming out a bit better than it might have. This year's total of $259.8 billion will come very close to matching the previous year's value—for the second year in a row. That's in spite of indications earlier in the year that a decline was underway.

Contracting for new construction reached its peak as long ago as 1987, showing no further improvement in 1988 or 1989. But no decline, either. The word that best describes construction in 1989 is "stalled," albeit stalled at a comfortably high level.

Prepared in October 1989 by the Economics Department, McGraw-Hill Information Services Co., George A. Christie, vice president and chief economist.

1990 Construction In Brief

This year's decline of interest rates is next year's recovery waiting to happen. Until recently, the temporary escalation of mortgage rates forced many families to postpone plans for home ownership. But that's changed. With conventional fixed mortgage rates averaging less than 10% in 1990, some of that deferred housing demand will resurface. That's where most of 1990's 5% improvement in construction contracting will be concentrated.

Commercial building and public works will not be contributing much to next year's recovery. Public works projects will be held to a very small gain as the need to reduce the federal deficit takes priority. Commercial building has been adjusting to high vacancy rates, the result of extensive overdevelopment during the mid-1980s. That adjustment will continue in 1990 with a further small decline of commercial construction.

So 1990's recovery will be narrowly based, confined mainly to housing, but it should be enough to get the stalled construction industry moving ahead again.

EXECUTIVE SUMMARY

This is not the way building cycles usually end. More typically, the denouement occurs in the familiar peak-and-crash sequence. Precedents abound. It happened in 1980, in 1974 and in 1970, to cite the most recent downturns. So why the soft landing this time? The key: diffusion. In the absence of a general economic recession, the long expansion of the construction sector through the mid- and late-1980s unraveled in bits and pieces instead of all at once. And that applies whether one looks at it by type of construction or by region.

Commercial building was the first to falter, and that happened as far back as 1986 when soaring office and apartment vacancy rates made it apparent that the tax-shelter boom was over even before tax reform made it official. But the collapse of the commercial market didn't do much more than slow the growth of total construction. Public works went next, in 1988, when Gramm-Rudman deficit targets clamped a lid on federal outlays for construction and other programs. But public construction was merely capped at a high level, not cut back. And there was still single-family housing, nearly one-third of total construction contracting, which refused to quit until 1988's credit squeeze took its toll. The result: lots of churning within individual building markets, resulting in stability of the total since mid-1987.

Divergent regional developments have been having a similar effect on the national numbers. From start to finish (i.e., since the 1982 low), the national total of construction contract value expanded by 65% before finally leveling off. Nevertheless, only two regions—the North Central and the West—were even close to being typical, while three others went their own ways. The South Central (alias the oil patch) was never in the game, peaking as early as 1983 and declining ever since. The Northeast and the South Atlantic, by contrast, far outpaced the others. More to the point, however, is the fact that each of the five regions turned down in a different year, leaving the impression of greater stability of the total than of its parts. Diffusion at work again.

There's a lesson in this. If the events that shaped construction markets over the past several years had occurred simultaneously instead of sequentially, the result most probably would have been the usual crash. But they didn't, so we've had the rare luxury of a soft landing instead. Now comes the task of pulling the several loose ends of the stalled construction market together again. That will happen in much the same manner as it came apart—piecemeal. There are three roads to the recovery of construction: commercial building, public construction and housing. And there are roadblocks.

Commercial building

The combination of high vacancy rates and a sluggish economy represents a formidable barrier to the recovery of commercial building in 1990. Nevertheless, there's been a change for the better in this overdeveloped market where progress has to be measured in terms of whether or not the annual declines of newly started construction are getting smaller. And they are.

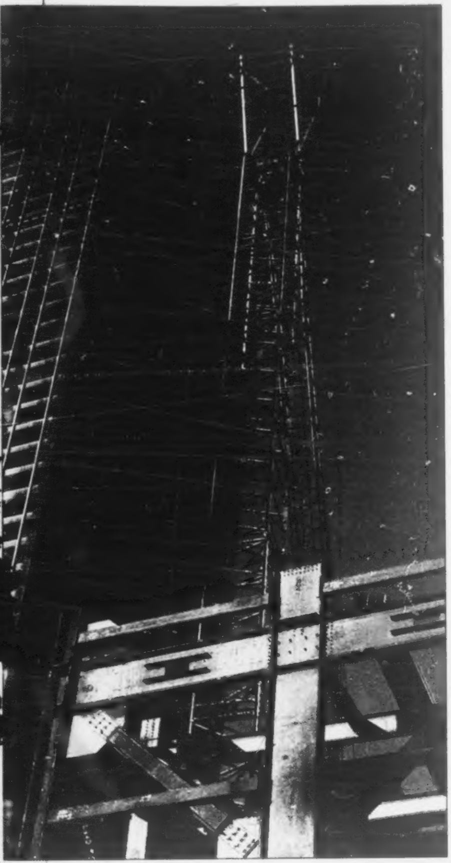
In 1989, the combined total square footage of new office buildings, apartments/condos and hotels is headed for its fourth consecutive decline—this time to a decade low of 740 million sq ft. That's 40% below the 1985 peak when the "tax shelter boom" was under a full head of steam. The good news is that 1989's decline, at 8%, is only half that of the two previous years, as contracting finally appears to be stabilizing in the range of 700 million to 800 million sq ft.

The perspective provided by hindsight now indicates that a volume of approximately 900 million sq ft per year (ideally 250 million sq ft of offices, 575 million sq ft of apartments/condos and 75 million sq ft of hotels) is about as much as the market can absorb in a good year. Any more than 900 million sq ft will drive vacancy rates up (as in 1983 through 1986). More pertinent to today's overbuilt situation: Vacancy rates can only be reduced by building less than 900 million sq ft a year.

Experience of the mid- and late-1980s shows how this works. In 1986, despite a 10% cutback in building, vacancy rates kept rising because that year's supply of new space still substantially exceeded the 900 million square foot threshold. Only after a further 16% reduction in 1987 brought contracting close to the 900 million equilibrium level and vacancy rates finally stop climbing. Still further declines of building in 1988 and 1989 below 900 million sq ft were needed to begin bringing vacancy rates down at last.

Only grudging progress has been made so far in absorbing the oversupply created during the period between the Economic Recovery Tax Act (1981) and the Tax Reform Act (1986), when accelerated depreciation overstimulated the commercial real estate market; but things are moving in the right direction.

Office vacancies currently average 18% around the nation, down from their high of 21%; apartments are now 7% vacant vs. their recent 20-year high of 8%. Hotels have shown little change, and the whole process has quite a ways to go yet. Getting the commercial building market back to a state of vi-



ability will obviously require an extended period of building less than 900 million sq ft per year.

Under such circumstances, why build even 700 million sq ft of commercial space this year or next? New buildings will continue to be built as long as they can be rented, all too often by shifting the vacancy problem to older buildings in less desirable locations. Renovation, rent concessions and/or abandonment of marginal existing structures are among the responses to continued new construction.

With so many variables in play, the "optimistic" outlook for new construction is stability at or near the 1989 volume of building for another two or possibly three years, an improvement over the steady decline since the mid-1980s. This prescription of only enough new building to keep vacancy rates coming down is hardly the stuff that recoveries are made of, however.

The 1990 estimated total of 725 million sq ft of commercial building, only slightly less than 1989's 740 million, will conceal divergent movements among offices (down), hotels (steady) and apartments (up). A short-run environment of lower interest rates and a generally sluggish economy will be giving multifamily construction an edge while simultaneously inhibiting office construction.

Public works construction

Public works contracting gives special meaning to the concept that spending for construction has reached a plateau. Since 1987, not long after the application of Gramm-Rudman deficit controls, construction of infrastructure projects has been stonewalled at $43 billion per year. This contrasts with its strong and steady growth through the middle of the 1980s, from a level of only $25 billion at the start of the decade. Since the plateau was reached, even the relative shares of transportation work (roads, bridges, mass transit) and

1990 CONSTRUCTION POTENTIALS

National estimates for 1990 show small upturn overall

	CONTRACT VALUE			FLOOR AREA		
	1989 PRELIMINARY	1990 FORECAST	PERCENT CHANGE	1989 PRELIMINARY	1990 FORECAST	PERCENT CHANGE
ALL CONSTRUCTION	$259,800	$273,500	+5%			
NONRESIDENTIAL BUILDINGS, TOTAL	89,275	87,750	-2%	1,255	1,175	-6%
COMMERCIAL AND MANUFACTURING, TOTAL	53,475	49,600	-7%	910	815	-10%
OFFICE BUILDINGS	20,675	19,025	-8%	220	195	-11%
STORES AND OTHER COMMERCIAL	24,125	22,100	-8%	540	475	-12%
MANUFACTURING BUILDINGS	8,675	8,475	-2%	150	145	-3%
INSTITUTIONAL AND OTHER, TOTAL	35,800	38,150	+7%	345	360	+4%
EDUCATIONAL	13,875	14,550	+5%	134	137	+2%
HOSPITAL AND HEALTH	8,250	8,750	+6%	69	71	+3%
OTHER NONRESIDENTIAL BUILDINGS	13,675	14,850	+9%	142	152	+7%
RESIDENTIAL BUILDINGS, TOTAL	122,850	136,900	+11%	2,190	2,375	+8%
ONE-FAMILY HOUSES	93,375	106,325	+14%	1,655	1,835	+11%
MULTIFAMILY HOUSING	23,400	24,525	+5%	465	472	+2%
NONHOUSEKEEPING RESIDENTIAL	6,075	6,050	—	70	68	-3%
NONBUILDING CONSTRUCTION, TOTAL	47,675	48,850	+2%			
PUBLIC WORKS, TOTAL	43,175	44,150	+2%			
TRANSPORTATION CONSTRUCTION	24,825	25,250	+2%			
ENVIRONMENTAL CONSTRUCTION	18,350	18,900	+3%			

Construction contract value in millions of dollars.
Floor area in millions of square feet.

GE LAMP

environmental projects (water resources, waste treatment facilities) have been frozen at 60%:40%. If any change is taking place in this catatonic construction market, it is the barely perceptible transfer of control from the federal agencies to the state and local governments.

At the federal level, the ongoing process of deficit reduction, along with the need to absorb some new initiatives (e.g., the savings and loan bailout, the war on drugs) will claim most or all of next year's projected revenue growth of between $50 billion and $75 billion. Even after some token reductions of defense spending and entitlement programs, the President's "no new taxes" pledge leaves little room for increased funding of federal public works programs in 1990. Perhaps the most that can be said is that the combined total of the construction programs of the Department of Transportation (DOT), Environmental Protection Agency (EPA), et al., is (so far) not slated for cuts.

1990 CONSTRUCTION POTENTIALS

■ The regions show mixed activity by market

	CONSTRUCTION CONTRACT VALUE		
REGION/CONSTRUCTION TYPE	1989 PRELIMINARY	1990 FORECAST	PERCENT CHANGE
NORTHEAST: TOTAL CONSTRUCTION	$50,125	$51,800	+3%
NONRESIDENTIAL BUILDING	18,250	17,900	-2%
COMMERCIAL AND MANUFACTURING	10,750	10,075	-6%
INSTITUTIONAL AND OTHER	7,500	7,825	+4%
NONBUILDING CONSTRUCTION	10,525	10,725	+2%
RESIDENTIAL BUILDING	21,350	23,175	+9%
ONE-FAMILY HOUSES	15,000	16,750	+12%
MULTIFAMILY AND NONHOUSEKEEPING	6,350	6,425	+1%
NORTH CENTRAL: TOTAL CONSTRUCTION	53,575	56,600	+6%
NONRESIDENTIAL BUILDING	20,600	20,575	—
COMMERCIAL AND MANUFACTURING	13,025	12,150	-7%
INSTITUTIONAL AND OTHER	7,575	8,425	+11%
NONBUILDING CONSTRUCTION	10,025	10,450	+4%
RESIDENTIAL BUILDING	22,950	25,575	+11%
ONE-FAMILY HOUSES	17,500	20,100	+15%
MULTIFAMILY AND NONHOUSEKEEPING	5,450	5,475	—
SOUTH ATLANTIC: TOTAL CONSTRUCTION	57,650	60,225	+4%
NONRESIDENTIAL BUILDING	18,300	17,625	-4%
COMMERCIAL AND MANUFACTURING	10,700	9,750	-9%
INSTITUTIONAL AND OTHER	7,600	7,875	+4%
NONBUILDING CONSTRUCTION	8,350	8,550	+2%
RESIDENTIAL BUILDING	31,000	34,050	+10%
ONE-FAMILY HOUSES	23,375	25,975	+11%
MULTIFAMILY AND NONHOUSEKEEPING	7,625	8,075	+6%
SOUTH CENTRAL: TOTAL CONSTRUCTION	31,950	34,500	+8%
NONRESIDENTIAL BUILDING	11,425	11,625	+2%
COMMERCIAL AND MANUFACTURING	5,850	5,875	—
INSTITUTIONAL AND OTHER	5,575	5,750	+3%
NONBUILDING CONSTRUCTION	8,500	8,625	+1%
RESIDENTIAL BUILDING	12,025	14,250	+19%
ONE-FAMILY HOUSES	10,375	12,425	+20%
MULTIFAMILY AND NONHOUSEKEEPING	1,650	1,825	+11%
WEST: TOTAL CONSTRUCTION	66,500	70,375	+6%
NONRESIDENTIAL BUILDING	20,700	20,025	-3%
COMMERCIAL AND MANUFACTURING	13,150	11,750	-11%
INSTITUTIONAL AND OTHER	7,550	8,275	+10%
NONBUILDING CONSTRUCTION	10,275	10,500	+2%
RESIDENTIAL BUILDING	35,525	39,850	+12%
ONE-FAMILY HOUSES	27,125	31,075	+15%
MULTIFAMILY AND NONHOUSEKEEPING	8,400	8,775	+4%

Construction contract value in millions of dollars.

Northeast consists of Conn., Me., Mass., N.H., N.J., N.Y., Pa., R.I., Vt.; North Central consists of Ill., Ind., Ia., Kan., Mich., Minn., Mo., Neb., N.D., Ohio, S.D., Wis.; South Atlantic consists of Del., D.C., Fla., Ga., Md., N.C., S.C., Va., W.Va.; South Central consists of Ala., Ark., Ky., La., Miss., Okla., Tenn., Tex.; and West consists of Alaska, Ariz., Calif., Colo., Hi., Id., Mont., Nev., N.M., Ore., Utah, Wash., Wyo.

Is there opportunity for increased public works spending in 1990 via state and local governments? Some, but not much. State governments are in better financial condition than the federal government in several ways: Collectively, state budgets are in surplus; most states have been raising taxes this year; many keep separate operating and capital budgets. In addition, states are setting up revolving loan funds to replace EPA's sewage treatment construction grants as required by the Clean Water Act (1987). Although state expenditures reflect a different blend of commitments that in many ways are as demanding as federal priorities (e.g., education and welfare vs. military preparedness and Social Security), their surplus position nevertheless implies a small but fundamental flexibility that does not exist in Washington.

In 1990, contracting for public works projects will not differ significantly from the past few years, either in its total value or in the types of work to be done. Governmental gridlock will continue to stand in the way of a breakout as state/local contracting, with the help of a friendlier bond market, only slightly more than offsets federal budgetary restraint. With total contract value inching above $44 billion in 1990, both transportation and environmental construction will be held to nominal gains too small even to keep pace with inflation.

Housing and institutional building

Ever since 1983, when the Federal Reserve celebrated its victory over double-digit inflation by liberating the economy from double-digit interest rates, one-family home building has been an outstanding performer.

Institutional building has run a close second. Being the types of building that are most sensitive to credit conditions, these are the ones that stand to benefit most from current developments in the money market.

Housing. While commercial building was having its boom and bust in the mid-1980s, and while public works construction was running into the wall of deficit reduction a little later on, one-family home building just kept getting

COMSTOCK INC M&C WERNER

better and better as the decade wore on. Starting from a depressed annual average of 700,000 units in the early years (1980-1982), one-family housing starts advanced to an average of 985,000 units during the middle years (1984-1986) and then climbed to 1,025,000 units in the closing years (1986-1989). (Note: All references to housing starts or dwelling units are based on F.W. Dodge terminology. Commerce Department data, which use somewhat different definitions of single and multifamily housing, nevertheless show parallel year-to-year changes.)

With most of the nation's population growth concentrated in the 35 to 55 age bracket—the "age of acquisition"—owner-occupied housing is enjoying strong demographic support at a time when total household formation is waning. Census data show that at the age of 35, half of family heads are renters; but by age 55, more than three-quarters of them become homeowners. Yet, as the early years of this decade demonstrated, demographic support doesn't count for much without a smoothly functioning mortgage market to convert potential into effective demand.

The accompanying chart illustrates the relationship between one-family housing starts and mortgage rates since 1980, a period brief enough that the longer-run determinants of housing demand (demographics, affordability, social values, etc.) can be considered temporarily fixed. It reveals much about the present state of the home building market:

- Within the fairly wide range of 10% to 15% mortgage rates, housing starts can swing from a low of 700,000 units to a bit more than 1,000,000 units along a curve that approaches 1,100,000 units as the short-term upper limit set by the combination of demographics and affordability.
- Because full potential is rarely achieved, recent experience suggests that under favorable credit conditions, the practical potential for one-family housing starts is currently about 1,050,000 units.

What the chart does not show is another short-run phenomenon—the normal delay of the response of housing demand to changes in the level of interest rates. If the reaction to rising mortgage rates were more direct, for example, housing starts would have declined sooner than they did in 1988 when mortgage rates began rising as early as the second quarter. The way it turned out, however, builders' response to 1988's higher rates wasn't evident until the first half of 1989. By that time, mortgage rates had already peaked and were coming down again, and the lag began to work in the other direction. Although mortgage rates started to fall in the spring of 1989, housing starts weren't ready to recover until late in the year.

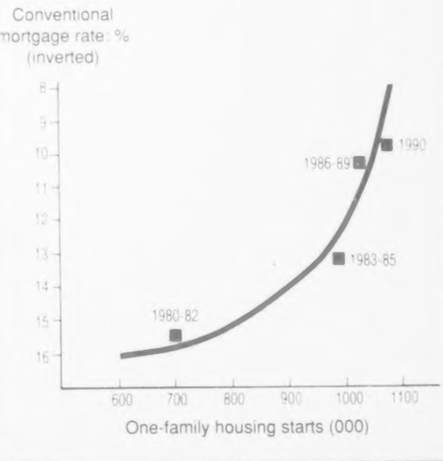
There's a rationale for this lag. It's the ritual that links the money market with the building business. As rates begin to fall, the initial reaction of potential borrowers is to wait and see. Even when home buyers are convinced that rates won't go much lower and are ready to borrow, builders aren't ready to build. They'd rather reduce their inventories of newly finished but unsold homes, which tend to swell during periods of rising interest rates. Not until inventories are down to a desirable six-month supply do builders take out permits and start new homes. The whole sequence—falling interest rates/existing home sales/permits/starts—can take as much as half a year. In the current situation it means that despite improving credit conditions through most of 1989, this year's total of one-family housing starts will reach only an estimated 975,000 units, leaving an important carryover of deferred demand.

In 1990, with mortgage rates averaging 9.75%, the realization of normal potential along with a partial carryover of deferred 1989 demand could lift one-family building to 1,075,000 units—a gain of 10%. The 1990 spurt of one-family home building may be short-lived, however. Before the end of the year rates will be moving up again; and without the benefit of deferred demand, one-family housing starts will settle back to their 1987/88 levels of about 1,025,000 units.

Institutional building. To appreciate the parallel between one-family housing and institutional building, it is only necessary to substitute municipal bonds for mortgages and to exchange the ends of the population "pyramid" for its middle. Growth of the population in the "under 15" and "over 65" age brackets is second only to the 35 to 55 year olds. Elementary schools and health care facilities are the obvious linkages.

Through most of the 1980s, contracting for educational, health and public administration buildings has shown vigorous 5% annual growth (in square footage), a sharp contrast to the declining trend of the 1970s when the school-age population was shrinking. A recent interruption of this growth of institutional building during the 1988/89 period of credit restraint is bound to be temporary. Renewed expansion is anticipated in 1990 as this market's underlying strength responds to lower interest rates.

■ Lower rates, more housing



The outlook for 1990...

Before long, contracting for new construction will be lifting off the plateau it has been confined to for the past three years. Despite a lack of short-term potential in either the overbuilt commercial market or the deficit-dominated public sector, a recovery of home building, backed up by improvement of institutional construction, will be enough to break the recent deadlock.

It is important, however, not to lose sight of the fact that little has changed concerning the generally bleak environment for the construction industry except for one very important thing: the cost of credit. For now, that's sufficient. It is almost axiomatic that a decline of interest rates, following a period of temporary escalation, will encourage fuller realization of the demographic potential in the credit-sensitive building markets. All that needs to happen has already happened. Favorable demographics for these markets are solidly established. Interest rates have fallen. Recession does not pose a serious threat. Under these conditions, it is reasonable to expect that 1990 will bring more than a normal volume of housing and institutional building, including an additional "dividend" as some of 1989's unrealized demand is recaptured.

A volume of 1,525,000 total housing starts in 1990, with gains in both one-family and multifamily units, will be an 8% improvement over 1989's depressed level of building. With inflation in residential building costs of between 3% and 4%, the potential for improvement in residential construction contract value next year is slightly on the high side of 10%. Institutional building, which is not as volatile as housing, will respond in its own way to the stimulus of lower financing costs—with a gain of between 5% and 10% in 1990.

For the time being, that's all there is. But it is enough to produce the first advance in total construction contract value since 1987. Because housing and institutional building together make up roughly 60% of total contract value, their combined 1990 gain of almost 10% will have a "bottom line" impact of 5% next year as total construction contract value rises from its $260 billion plateau to a new high of $273 billion.

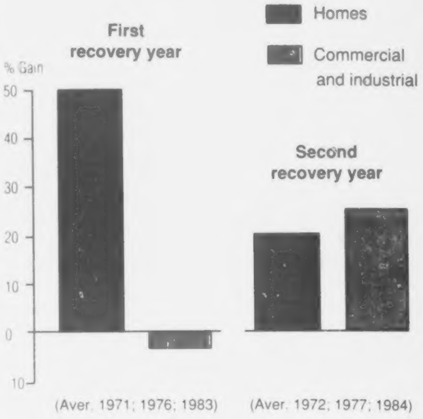
...and 1991

The case for moving ahead in 1990 is based largely on falling interest rates. The 1989 decline of interest rates is a 1990 housing recovery just waiting to happen.

And then what? If the only difference between 1989 and 1990 is more favorable credit conditions, all that is happening is the shifting of some 1989 housing demand into 1990. What does this say about 1991? What does it say about nonresidential construction? The moment of truth for this newly developing expansion will arrive in 1991, its critical sophomore year. This is when 1990's tentative advance will either pick up momentum or burn out. It is when we will discover whether or not we have a real recovery going. Two possible scenarios illustrate different outcomes of next year's positive developments in construction contracting.

Scenario No. 1: Business as usual. Analysis of the recovery/expansion phase of building cycles over the past two decades reveals a consistent sequence. Recovery typically takes hold first in home building in response to falling interest rates. This much of the "standard" recovery pattern corresponds closely with the outlook for next year.

■ What typically happens in a recovery



In the second year, the early recovery of residential building is usually reinforced by an expansion of nonresidential (i.e., commercial and industrial) construction, as the accompanying chart shows. The development of this second-stage support is more complex than the interest rate/housing reflex. Certainly the longer time needed to get larger nonresidential projects underway plays a part. So, too, does the time-honored principle that business capital spending, of which commercial and industrial building is a component, typically lags the dynamics of the economy at large.

In the "business as usual" scenario, 1991—the critical second year—would bring side-by-side increases of housing and nonresidential building, resulting in an acceleration of the first year's gain and forming a base for several years of continuing cyclical expansion. That's the way it has worked for at least the past two decades.

Scenario No. 2: Second stage burnout. This alternative to "business as usual" recognizes two events of the 1980s whose consequences will be distorting construction markets well into the 1990s. One is the Economic Recovery Tax Act of 1981, which greatly overstimulated commercial building by its accelerated depreciation provision. Although full-term depreciation was restored by tax reform, ERTA's backlash—stubbornly high vacancy rates—will depress new building for years to come. The other event is the Deficit Control Act (1985), more familiarly known as the Gramm-Rudman Act. A reaction to runaway deficits, Gramm-Rudman has effectively frozen funding for federal construction programs. Because of this "baggage" of the 1980s that must be carried into the 1990s, a sizable block of nonresidential construction may not be available to provide the usual second-stage boost in 1991.

Like the first scenario, this one says that 1990 can be relied upon to deliver

THE 1990s IN CONSTRUCTION

■ Challenges and opportunity

At the start of 1989, the construction industry faced three major problems. One of them—artificially high interest rates—is already resolved, and the prospect of improved housing and institutional building is the essence of the 1990 outlook.

Another problem, the glut of commercial buildings, is by now partially resolved. A 40% cutback of new construction since 1986 means that the hardest part of the adjustment to the mid-1980's overbuilding is behind us. A third problem, the scarcity of public funds for construction programs, is farthest from being solved.

What's needed is a blend of deficit reduction, user fees, reordering of federal priorities and increased participation by state and local governments. Finding ways to maintain and develop the nation's infrastructure could well be the construction industry's greatest challenge in the coming decade.

an above-average volume of housing as some of 1989's deferred demand is salvaged. But that is where the similarity ends. By 1991, housing starts will ease back to the level prevailing in 1987/88 and, more important, the reinforcement of nonresidential building required to keep total construction advancing through the second year of recovery will be absent. In this by-no-means-worst-case scenario, recovery loses whatever initial momentum it had by 1991 and stalls. Total construction contracting settles back to its former plateau to wait out the resolution of the problems that are holding back the development of the commercial and public works markets.

Making a choice between these two extensions of 1990's developments is the task of next year's construction outlook. By then, conditions in the pivotal nonresidential sector will be clearer than they are at present. For the time being, though, it is hard to avoid the conclusion that 1991 will develop more along the lines of the second scenario, which recognizes that some fundamental handicaps left over from the recent past have not gone away. On the other hand, no severe crash (the "worst-case" outlook) is on the horizon. Instead, the construction industry appears headed for nothing worse than high-level stagnation until the distortions of the 1980s are gradually sorted out. ☐

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In The Background

The initial effects of another dose of monetary restraint are wearing off. The economy's growth has been slowed, inflation has been tamed and interest rates are on their way down again. What remains is the final chapter of a delicate and apparently successful exercise in fine tuning: some lingering deceleration of economic activity as the lags play out, and following that, a period of renewed, if not particularly vigorous, expansion.

Because monetary policy is more effective at restraining economic activity than it is at stimulating expansion, the hardest part lies ahead. If the gestation period for monetary policy is roughly three quarters, the Federal Reserve's shift to stimulus should have economic activity (as measured by real GNP) accelerating by the first quarter of 1990, with continuing improvement throughout the balance of next year. That would follow progressive weakness in the closing months of 1989, as growth winds down to about 1% (vs. 3.7% in 1989's opening quarter). If all goes according to the script, 1990 will be a mirror image of 1989—weak beginning/stronger finish. On an *annual* basis, however, both 1989 and 1990 will show substandard growth, the price of keeping inflation below 5%.

Next year's potential for GNP growth—roughly 2% over 1989's output—will rely heavily on above-average residential building and continued expansion of export markets as business capital spending and consumption lag the recovery. Government spending, as might be expected, will contribute little to the economy's revival. Inflation, as measured by the Consumer Price Index, will remain close to 4% in 1990 after averaging just under 5% in 1989. The year-by-year steady decline of unemployment (from its 1982/83 high of 9.5% to this year's 5.25%) will be temporarily interrupted, though not seriously.

No measure of economic activity is more critical to the outlook for construction than interest rates. The most recent excursion of the conventional fixed mortgage rate, with the central bank as its tour guide, began in the second quarter of 1988. From a low of 10.1%, the basic mortgage rate was nudged to a peak of 11.2% late in the first quarter of 1989. After receding gradually through April, the mortgage rate then plummeted in May and June, breaking through the 10% level in July.

Although the Fed appears to have adopted a position of neutrality in the money markets by midyear, the mortgage rate is likely to continue to decline through the remainder of 1989 as the slowing pace of economic activity generally inhibits loan demand. It is assumed that the conventional mortgage rate will stabilize at 9.75% during the first half of 1990 and advance in the second half as demand strengthens. Compared with an average of 10.4% for 1989, the conventional fixed mortgage rate is forecast to average 9.8% in 1990—the first single-digit year since 1978!

Beyond the fluctuation of interest rates brought about by on-and-off monetary restraint in the continuing attempt to strike the proper balance between growth and inflation, there will be a barely perceptible downward trend of long-term interest rates in the 1990s as the federal deficit is reduced in small and difficult decrements. Progress in deficit reduction is expected to be somewhat better than the excessively conservative projections of the Congressional Budget Office, which foresees no reduction at all between 1990 and 1993. At the other extreme are the Administration's overly optimistic projections based on unrealistic revenue expectations. An achievable schedule of deficit reductions of approximately $10 billion per year implies persisting inflationary pressure from fiscal operations, a generally high level of interest rates and an average annual increase of federal outlays that exceeds the going rate of inflation by about 1%.

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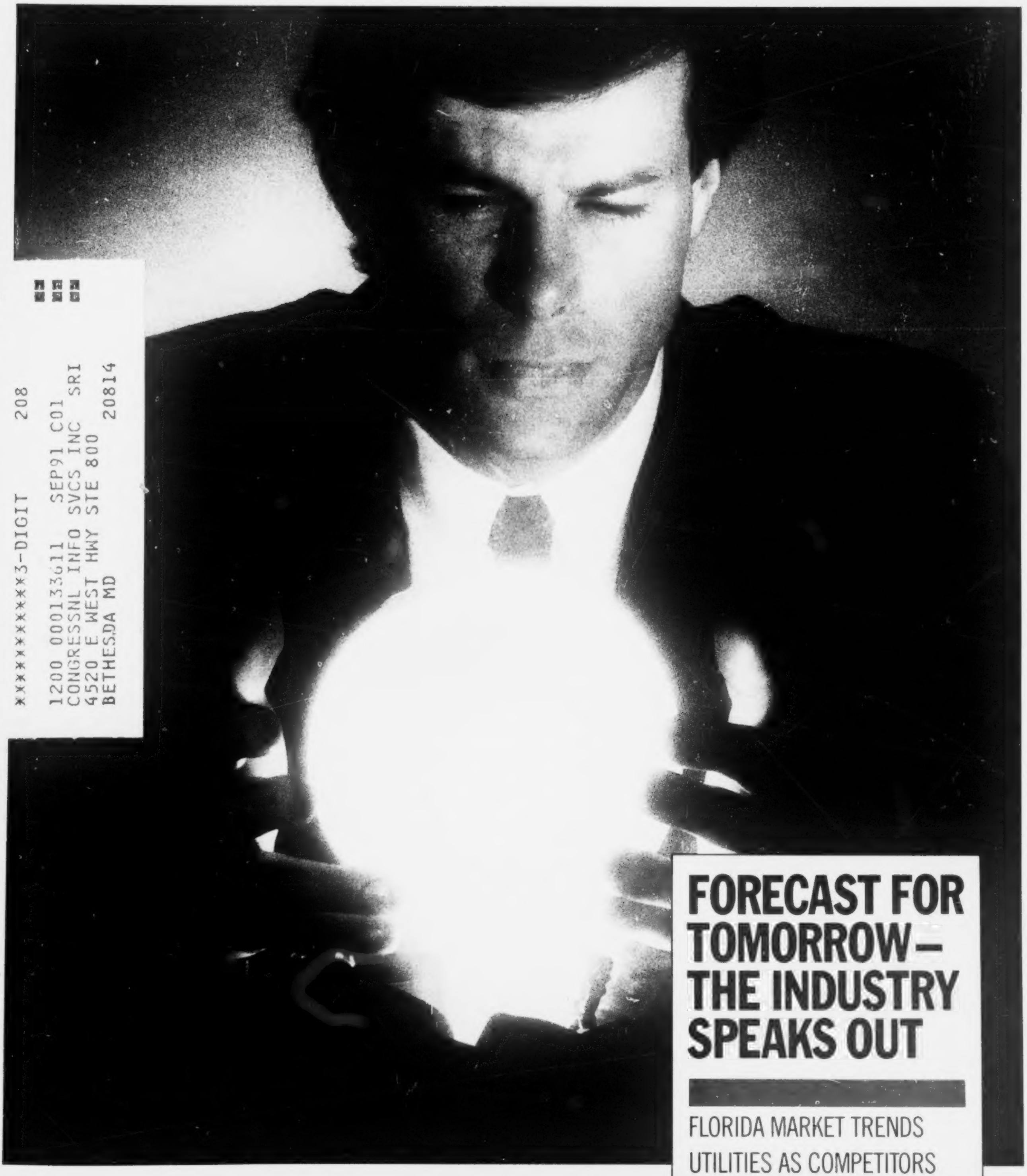

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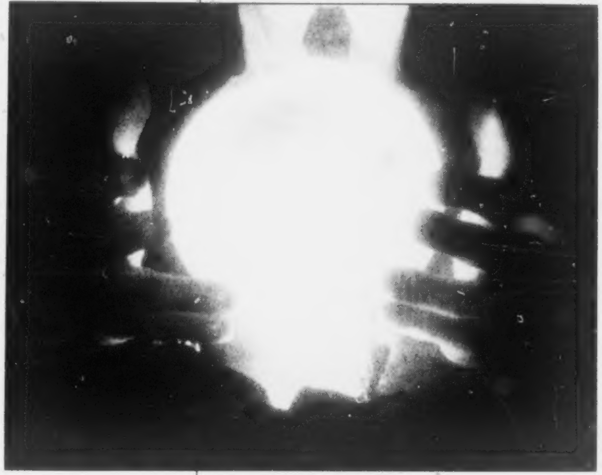

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THE PUBLISHER'S NOTE

We stand at the threshold of a new year, a new decade—and a new National Electrical Code. To help the electrical industry understand the Code changes, our sister publication, *EC&M* magazine, is producing its first training video, "Essential Changes in the 1990 NE Code."

The editors of *EC&M* have selected the changes in the NE Code that have the most impact on common applications for this video presentation. Adapted from the book "Illustrated Changes in the 1990 National Electrical Code," written and edited by Joe McPartland and his son, Brian, an *EC&M* editor, the 60-minute video uses straight-forward language, on-location shots and computer graphics to show viewers how to comply with the new Code. By teaching users how to avoid costly installation errors, the video can quickly pay for itself. It can be used as a refresher, a training tool or even as a gift or premium for customers. It's a must for everyone in the electrical industry—distributors, contractors, electricians, engineers and inspectors as well as electrical maintenance and training personnel.

As we enter the 1990s, this new video, which will be available next month, represents just one small step toward helping the industry cope with the many changes awaiting us all.

John G. Behmke

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simply because they can't draw or because they leave out details like structural columns that cannot be moved. When a distributor has a floor plan, she typically works with him via telephone and the mail. Otherwise, she has the distributor send her photographs of his existing showroom or visits the company herself.

Dunn, on the other hand, says he can typically draw up plans in a day or two for a demonstration room, which is a more concentrated space than an entire showroom.This rarely requires that he visit a distributor or even talk directly with him. "The reps do all of the ins and outs. Basically, I just get a rough sketch from somebody saying that they want a demo room for 15 ft by 24 ft, for instance. I then determine if the space is adequate and that's it," he says.

Dunn's demo rooms generally measure 15 ft by 22 ft (about 300 sq ft to 400 sq ft). Adequate wall space is especially important, he says, since his designs include a lot of vertical lighting or wall grazing.

Even though Dunn designs many demo rooms a year, he notes that no two rooms are ever alike. A distributor's individual marketplace and lighting emphasis will assure that he doesn't get a rubber stamp design. "We are always looking at new technologies to introduce in each one," he says.

Consultants also warn of common mistakes distributors make, such as waiting until they are too far into the design process to scrutinize the plans. Hilling tries to prevent this problem by breaking the design process into three separate phases, which she calls programming, schematic design and contract documentation. "Each phase is distinct and is built upon the others," she explains, "meaning that the client has to approve each one. That way, in the end, there are no surprises in the design and the client knows what he is getting, line-drawn and drafted on paper."

Hilling advises her clients to beware of overlooking details, which can result in wasting a lot of money. Since consultants "are just like a meter running and each hour is billable," distributors' changes must be made as early in the design process as possible. "Once a distributor approves a phase, that means that there will be building on it; and it will take longer and cost them more money if they go back and change their minds."

Distributors should be watchful of their costs from the start. According to one lighting manufacturer, distributors must figure their building expenses in detail to avoid cash problems in the final budget. "It is like building a house," says the manufacturer. "You think you have it all figured out, and then you walk in and realize you needed extra insulation here and a window there." He recommends that distributors rely heavily on consultants in developing a budget, which could run from $150,000 to $250,000 for the renovation of a 2,000-sq-ft lighting showroom, including design and construction as well as fixture and special display expenses.

This manufacturer adds that distributors must allot sufficient time for the building of the showroom and that they shouldn't do construction work themselves. "These things have to be done by professionals," he cautions. "Everybody has to understand that you are not just putting up a ceiling, but rather a structure that has to hold hundreds of pounds of fixtures. It has to be anchored properly. Most installations are drop ceilings, too, so you have to make sure it doesn't sway or get off kilter."

One consultant advises distributors to allow extra electrical capacity for technical changes as well. "If they plan for 3,000 watts of capacity, they should wire it for more than that because as time goes on, there might be changes. For instance, a distributor may want to add feeder lines to service a different scheme," he explains.

Lighting By Design's Zekowski says that it is important not to make the lab's lighting system so complicated that its own staff cannot operate it, resulting in a lab that nobody wants to use. To combat this, he believes all light switches and controls should be "apparent" in a lab so that it doesn't take a highly trained person to use it. He doesn't like complex or highly-styled furnishings in the lab, either. Furnishings that are as fashionless as possible allow customers to more readily envision how the lighting would look in their own personal space, he says.

"These are difficult points to enforce because a lot of distributors are preconditioned," says Zekowski. "Many of them think in terms of state-of-the-art switching and end up putting in very expensive switching systems or spending a lot of money on an interior decorator who helps to defeat the purpose of the lab."

In the end, distributors have much to consider when upgrading or constructing a lighting showroom. Getting a good consultant, and then following his or her advice, should make the process go that much more smoothly. As Colker of West Virginia Electric Supply points out, his company had to make very few modifications to its showroom layout plans. Says Colker: "If you buy good advice, you should take it." ☐

ECONOMIC UPDATE

SUNNY SOUTH

EVERYWHERE IN THE SOUTH, THERE'S OPTIMISM ABOUT 1989.

■ All across the South, in the 16 states that make up the region, electrical distributors expect a good year in 1990, following a good 1989.

Three distinct areas make up the South; in one of them, distributors expect one of the highest growth rates of any region of the country, while in the others, they think their growth will be about average or a little below that of other regions in the nation.

Electrical distributors in the southern states along the Atlantic Coast expect business growth in 1990 to be about 6.8%, right about average with wholesalers across the country. This prediction means they anticipate slower growth in 1990 than in 1989, when they reported gains in the vicinity of 12%.

The state of Florida dominates this area of the South, with expected sales of $2.9 billion in 1990, representing a predicted growth of 7.6%. All other states along the South Atlantic coast expect positive growth, from a high of 14.0% in Maryland to a low of 2.0% in Delaware.

In Texas for 1990, distributors expect to have a decent year, following a 1988 and 1989 that represented the best growth they've seen since the drop in oil prices set off economic crisis in areas dependent on energy-related

1990 SALES FORECASTS

■ Upbeat outlook for the South

STATE	DISTRIBUTORS' FORECAST % CHANGE	EW SALES FORECAST ($ millions)
ALABAMA	7.7%	$ 556.5
ARKANSAS	8.4%	291.2
DELAWARE	2.0%	127.5
DISTRICT OF COLUMBIA	5.0%	370.2
FLORIDA	7.6%	2,908.1
GEORGIA	4.4%	1,326.9
KENTUCKY	10.9%	415.5
LOUISIANA	7.2%	739.6
MARYLAND	14.0%	1,093.3
MISSISSIPPI	5.0%	234.9
NORTH CAROLINA	8.5%	1,320.1
OKLAHOMA	1.4%	307.4
SOUTH CAROLINA	10.5%	487.2
TENNESSEE	9.4%	1,145.2
TEXAS	7.9%	3,906.0
VIRGINIA	6.9%	1,150.0
WEST VIRGINIA	17.0%	237.6

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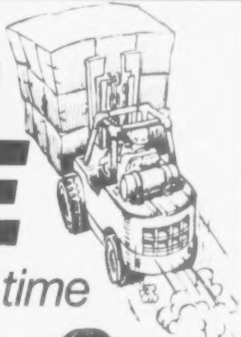

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industries. Texas electrical distributors expect a 7.9% increase in sales for 1990. In the states surrounding Texas, too, distributors predict good sales increases. For the region including Texas, Louisiana, Arkansas and Oklahoma, the outlook is for 6.3% growth in 1990, a little on the low side among the regions, but still one of the more positive outlooks on the part of distributors in those states in many years.

In the Deep South, distributors in the states of Alabama, Kentucky, Mississippi and Tennessee look forward to one of the best performances in the country in 1990 with a 7.2% increase forecast for the year.

Nationwide, electrical wholesalers forecast a growth of 6.7% in 1990. If this prediction were to come true, it would mean a falloff in growth after a very good 1989. The increase in sales for 1989 was estimated to be approaching 11.0% at the time the survey gathering these forecasts was taken in August of 1989. Some softening of business conditions later in 1989, however, probably would have led electrical distributors to lower their projections for 1989 and 1990 had the survey been done later in the year.

Texas and Florida dominate the South with expected electrical wholesaler sales of $3.9 billion and $2.9 billion respectively in 1990. Georgia has been moving up in size and is anticipated to come in at $1.3 billion, followed by North Carolina at $1.3 billion. The South is home to three of the top ten states for electrical distributor sales: No. 2 Texas, No. 4 Florida and No. 10 Georgia. ☐

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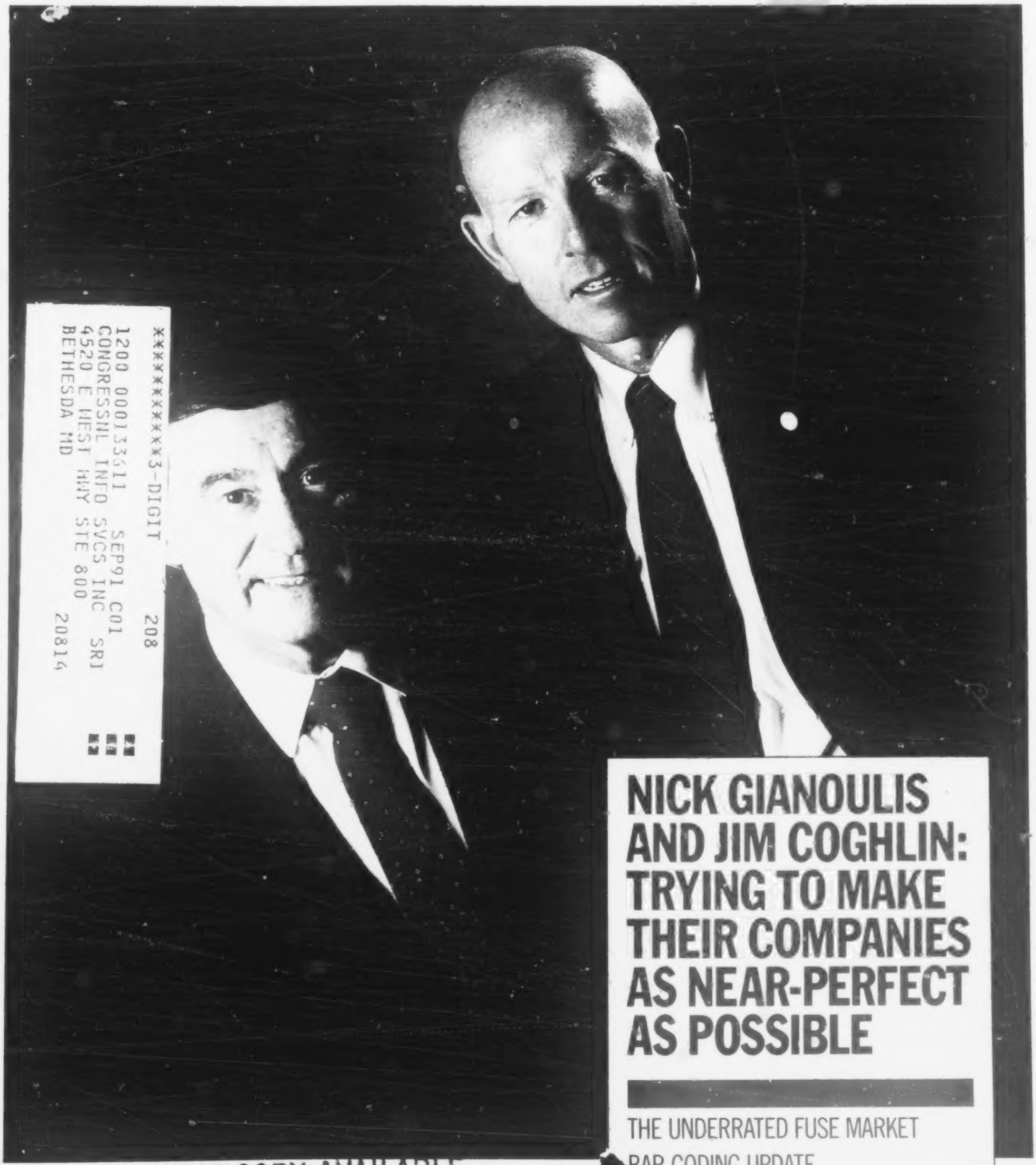

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NICK GIANOULIS AND JIM COGHLIN: TRYING TO MAKE THEIR COMPANIES AS NEAR-PERFECT AS POSSIBLE

THE UNDERRATED FUSE MARKET

BAR CODING UPDATE

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NUMBER 2

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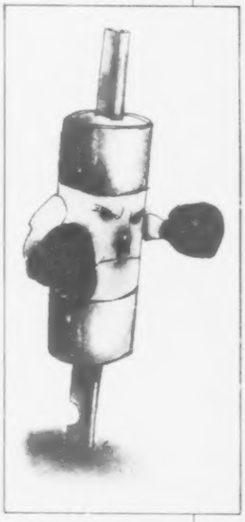

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THE PUBLISHER'S NOTE

ELECTRICAL WHOLESALING is now 90 days into its marriage with Intertec Publishing Corp., its new owner. As with any newlyweds in the business world, during the first few months each partner must get used to living day-to-day with the other. Those of you who have been through a merger or acquisition know what I'm talking about.

The glue that will hold this relationship together, and the primary reason Intertec bought ELECTRICAL WHOLESALING, *Electrical Marketing* newsletter, *EC&M* magazine and, several years earlier, *CEE News,* is the editorial quality of these publications. Intertec wanted us because our top-shelf editorial coverage makes the publications a profitable addition to the company's growing stable of business magazines.

I'm happy to report our fine editorial staff is totally intact, which means we'll continue to deliver the same quality editorial product you've come to expect from us through the years. These editors, dedicated to the electrical industry and to magazine publishing, aren't going to scatter. It's a publisher's delight to have an experienced editorial staff.

These are exciting days for our publications, and we already have some new products to roll out. These include *Code Watch,* a newsletter on the National Electrical Code, and a training video on changes in the 1990 NE Code. We will keep you posted on other developments this year.

John G. Behmke

JOHN G. BEHMKE, Publisher

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however, it may not be worth their while to think about, unless they can quickly and easily figure out exactly what it is.

Second, pay the bonuses separately from ordinary pay. That way, salespeople can see that if management asks them to sell something and they do, it delivers. There is another reason, too. Sometimes married employees are motivated most when they know they have an opportunity to earn a few extra dollars that can be used for "something special" or something personal rather than be put into the family kitty to pay the bills. It makes good business sense to give sales personnel this chance.

Another way a distributor can make a relatively small bonus stand out is to pay it by a separate check, for the full amount, without taxes taken out. Even though taxes are unavoidable, there is nothing more irritating to a salesperson than having worked out that he made a $100 bonus on a promotion only to get a check for $89.07. Of course, taxes must be withheld, but it is perfectly acceptable to withhold them from the next standard paycheck.

Whether one is talking about the basic incentive portion of outside salespeople's pay or a small bonus, the point is the same: The amount must seem significant, either because it is a large portion of the paycheck or because it is a visible amount above and beyond "ordinary" pay.

Incentive rewards should not be determined by a linear or straight-line method. Many compensation plans used within the electrical wholesaling industry can be called "linear" or "straight-line." Under such plans, salespeople are paid the same percentage whatever the level of performance—sales or gross profit—they achieve. For example, a firm pays its outside salespeople 10% of gross profit (in dollars) on the sales they make, whether the gross profit percentage on the business was 20% or 25%.

It is possible, though, to use a graded progression approach. Unlike linear arrangements, these plans give extra rewards for higher levels of performance. Thus, if a company wants to achieve a 25% gross profit in a territory, it might decide to pay salespeople 5% commission for 22% gross profit, 6% for 23%, 8% for 24% and 11% for 25%. It is easy to see why this system would motivate a salesperson in a way that paying a fixed percentage on gross profit would not.

Although a sound compensation/incentive plan can last for years, its numerical goals must be adjusted annually. When a distributorship has a marketing strategy, it has not only a clear sense of the position it wishes to occupy a few years down the road, but also some well-defined plans to get there. Such long-range goals cannot be achieved overnight; they must be gone after step by step. The numerical goals assigned to salespeople for compensation purposes, therefore, need to be adjusted over time. One way to increase a company's market share in a territory from 15% to 40%, for example, might be to capture different groups of customers over each of three years. Asking the sales staff to do it all at once might fail, but providing incentives that induce salespeople to target one customer group the first year, a second the next and a third in the final year might have a chance of success.

A second reason to change specific goals annually is to prevent salespeople from becoming self-satisfied or from thinking that having built a base of business they can take it easy and reap the rewards. A company cannot grow if its salespeople can assume their monthly income the way a trust fund beneficiary can expect the monthly check.

Finally, managers should be able to change their goals regularly because flexibility is important in business management. Having a rigid strategic marketing plan is like having no plan at all; if business circumstances change, the distributor will respond to the changes and forget the plan. If a plan is to be valuable over time, it must be sufficiently unstructured so that, within its contours, management can respond to changing conditions. Even though a well-thought-out sales compensation plan should survive many changes, the numbers specifying the areas, target accounts and margins salespeople are asked to go after must be able to shift easily with the tides.

The electrical wholesaler has no more important weapon for achieving long-range market objectives than his incentive compensation plan. While tying compensation to strategy must be done in a carefully thought-out process, it need not be a lengthy or expensive one. The approach depends on the premise that good salespeople are, by nature, performance-driven. If a company's management is thorough in formulating its marketing goals and careful about constructing compensation incentives that will induce salespeople to achieve them, a distributor can move beyond "hit or miss" marketing strategies. □

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ECONOMIC UPDATE

SOFTENING IN THE EAST

ELECTRICAL DISTRIBUTORS IN THE EAST EXPECT A FALLOFF IN GROWTH IN 1990.

■ For much of the 1980s, business was booming along for electrical distributors in the New England and Middle Atlantic states. For example, in 1987 distributors reported sales in New England to have been up 10.4% and in the Middle Atlantic states to have been up 11.1% over the previous year, while electrical distributors' sales nationwide were up only 6.1%. Likewise, distributors reported 1988 sales to be up 12.8% in New England and 11.2% in the Middle Atlantic states, a bit ahead of the results for distributors nationwide in 1988.

1990 SALES FORECASTS

■ The East looks a bit shaky

STATE	DISTRIBUTORS' FORECAST % CHANGE	EW SALES FORECAST ($ millions)
CONNECTICUT	10.3%	$902.8
MAINE	S	215.9
MASSACHUSETTS	5.5%	1,224.2
NEW HAMPSHIRE	S	114.0
NEW JERSEY	6.2%	2,053.8
NEW YORK	9.1%	3,937.0
PENNSYLVANIA	10.2%	2,107.9
RHODE ISLAND	S	119.9
VERMONT	S	102.7

S = insufficient returns

The tide began to turn in 1989, however. Distributors in New England anticipate that sales will have risen 7.2%, and in the Middle Atlantic states they forecast 8.8% growth in 1989, both below the nationwide performance (preliminary) of 11.0% growth. Those predictions should be viewed as somewhat optimistic; they were made by distributors in the region in mid-1989, before the regional economic difficulties in New England, especially in the Boston area, became widely apparent. The softening business conditions, which some are calling a regional recession, would probably have led electrical distributors to lower their projections for 1989 and 1990 had the survey to collect the data been done later in the year.

With that fact in mind, the forecasts for 1990 also should be taken with a grain of salt. Distributors in New England were saying 1990 would be up 7.1%, while those in the Middle Atlantic states were anticipating +8.9%. The largest 1990 growth rates in these two areas of the country were forecast by distributors in Connecticut (+10.3%) and Pennsylvania (+10.2%).

Nationwide, electrical wholesalers forecast 6.7% growth in 1990. If this prediction were to come true, it would mean a dropoff in the rate of sales growth after a very strong 1989. Nonetheless, it would represent the eighth straight year of sales increases for electrical wholesalers. Softening business conditions in areas like New England, however, may mean 1990 will show less growth than distributors there anticipated at mid-year 1989, when the survey gathering these forecasts was taken.

The East Coast states are a contrast in very large and very small. Among the nine states in this area are four of the smallest states in the country in terms of electrical distributor sales (Vermont, New Hampshire, Rhode Island and Maine) and four of the largest (New York, New Jersey, Pennsylvania and Massachusetts). ☐

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One of ELECTRICAL WHOLESALING's major resources is its access to the electrical expertise of *Electrical Construction & Maintenance (EC&M)* magazine's editors. Whenever EW editors have questions on technical aspects of the electrical industry, the answer is often just a few steps down the hall because they can draw on the knowledge of *EC&M* editors.

This immense pool of electrical knowledge increased significantly when Fred Hartwell recently joined *EC&M*'s staff. Fred's credentials are impeccable. Before coming to *EC&M*, the University of Massachusetts graduate was the head electrician at Hampshire College in Amherst, Mass. He is also president of Hartwell Electrical Services, Inc. in Amherst, which provides continuing education for electricians and consultation in electrical code work. Fred is the electrical inspector for the town of Pelham, Mass., and a member of two prestigious industry organizations—the National Fire Protection Association (NFPA) and the International Association of Electrical Inspectors (IAEI).

Fred's knowledge of the National Electrical Code (NEC) is also quite impressive. Several of his proposals for NEC revisions have been accepted, and he has been a panelist for many of *EC&M*'s Code conferences and seminars. He is also a member of the editorial board for *Electrical Code Watch*, the monthly newsletter we recently launched.

That's quite a background, and we are just delighted to have Fred on our staff.

John G. Behmke

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BIGGEST

ELECTRICAL WHOLESALING'S RANKING OF THE LARGEST U.S. ELECTRICAL DISTRIBUTORS IS AN INDUSTRY STANDARD.

■ The push to be bigger. The need to be more productive. The desire to acquire formerly independent firms. The struggle to survive difficult business conditions. In capsule form, that's what is happening thoughout the electrical wholesaling industry; and it's nowhere better seen than among the 250 companies in our 1990 ranking of the largest electrical distributors.

This list, the twelfth that ELECTRICAL WHOLESALING has compiled since 1970, shows the chains (electrical distributorships with five or more houses) increasing in number, sales volume and employees—but not necessarily in market share, due to what appears to be the up-sizing of companies throughout the industry. Productivity, as measured by sales per employee among firms on the list, has advanced, but not as fast as the rate of growth in sales industry-wide. And the rapid pace of acquisitions, closures/failures and down-sizing continues, to the extent that 29 of 1988's biggest disappeared from the 1990 list.

Back in the 1970s and even as recently as the early 1980s, the sale or merger or failure of a big electrical distributorship was an unusual event. Today it almost seems commonplace. In the last two years alone, bankruptcies or closures appear to have claimed five of the firms on 1988's 250 Biggest ranking. Also in the space of those two years, a total of 12 of the companies in the ranking in 1988 were acquired by other distributors on the list, while three are under new corporate ownership although they have retained their identities. And one of the companies on the 1990 list, No. 108 Electric Specialty & Supply Corp., Boston, Mass., expects to finalize its sale to Branch Group Inc., Forestville, Md., No. 22, in 1990. All that acquisition activity follows on the heels of 15 acquisitions and seven new corporate owners at the time we did the 1988 listing, making for a turbulent and unprecedented four years in the history of the industry.

The cutoff to make the 250 spot this year was 52 employees, a bit below 1988's 55 employees. That year marked the first time in many years that the cutoff figure had changed—for several listings before 1988 it had been at 45 employees. That the cutoff figure remains in the 50-plus employee range confirms the on-going up-sizing of many of the larger firms.

In terms of productivity, these large companies as a group made some progress in the two-year period since the last listing, although in essence they have only just come back to where they were four years ago. The sales per employee for the companies in this year's ranking (based on the 140 distributorships that furnished both employee counts and 1989 sales figures) rose to $276,000 from $241,000 in 1987. While that marks a healthy increase of 14.5%, industry sales are thought to have increased at least 20% and perhaps as much as 25% over the same period. Back in 1985, sales per employee for these big distributors stood at $275,000.

In addition to providing an overview of activity among the companies at the top of the electrical distribution industry, this ranking gives a guide to the industry's size and structure. In total, the 250 firms listed here employ 57,741 people in electrical wholesale operations. That figure includes data on several companies whose numbers of employees were estimated by us through internal or industry sources. They accounted for approximately $16.8 billion in sales in 1989. With electrical wholesaling industry sales just under $40 billion in 1989, these 250 firms do 42% of the industry's business.

These data underscore two facts about the electrical wholesaling industry. First, they show that even though the large, visible firms tend to get a lot of attention, it is smaller firms, with less than 55 or so employees each, that do the bulk of the business in the industry, almost 60% of it.

Secondly, they reveal the meaning of "big" and "small" in the electrical wholesaling industry. While there are a number of firms with hundreds of employees and a few with thousands, a firm with only 60 employees is considered to be among the biggest in the business. Of the estimated 5,000 or more U.S. electrical supply houses, 95% have less than 55 employees.

Among the companies on the list are the following:

The national chains. General Electric Supply Co., Bridgeport, Conn., Graybar Electric Co., St. Louis, Mo., and Westinghouse Electric Supply Co., Pittsburgh, Pa., have long been known in the industry as the national chains. By 1984, Consolidated Electrical Distributors, Inc., Westlake Village, Calif., had joined their ranks. These four electrical distributors employ approximately 13,800 people, if our estimates are accurate. We would put their combined sales volume at approximately $4.4 billion, or about 11% of industry

By Andrea Herbert, Chief Editor

sales. This percentage share of the market held by the national chains remains the same as it was in 1988.

If we were to include two other companies—the wire and cable distributor Anixter Bros., Inc., Skokie, Ill., and the motor and other products distributor W.W. Grainger, Inc., Skokie, Ill.—in the national chain category, where they logically belong by virtue of the number of houses each has and their representation in most states, the electrical employee count rises to close to 20,000, the sales volume to $6.1 billion and the market share to 15%.

The super-regional chains. This term is the designation we give to large chain distributorships that have spread beyond regional boundaries. They include All-Phase Electric Supply Co., Benton Harbor, Mich.; Consolidated Electric Supply, Inc., Miami, Fla.; Crescent Electric Supply Co., East Dubuque, Ill.; EESCO, Inc., Chicago, Ill.; Noland Co., Newport News, Va.; and Summers Group, Dallas, Tex. Together they employ 6,020 people and account for $1.75 billion in sales, approximately 4% of industry sales. This market share, too, remains unchanged since our last listing. No new firms have moved up to super-regional status in recent years, although Stuart C. Irby Co., Jackson, Miss., Southern Electric Supply Co., Meridian, Miss. and Platt Electric Supply, Inc., Beaverton, Ore., are approaching the super-regional level of coverage as they branch out into more and more states.

The regional chains. On this list we count 40 electrical wholesalers with five or more branches in three or more states, our definition of a regional chain. Other chain distributors exist in the industry; but since they have fewer than 52 employees, they did not make this listing and are not counted here. These companies have increased their ranks by three since 1988. Today they employ 9,115 and probably do a combined annual sales volume of around $2.6 billion.

The statewide chains. These electrical distributors with five or more branches confine their operations within one state. There were 44 of them in this year's ranking; last time there were 41, and just two years previously there had been only 29. They employ about 6,150 people and do about $1.6 billion in sales.

The two-state chains. These companies have crossed state borders with their five or more houses, but they haven't spread far enough that they could be called regional chains. There are 29 of them on the list this year, in contrast to 23 in 1988.

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BIGGEST

CHRISTOPHER GOULD

Multi-branch distributors. These firms again dominate the 250 Biggest listing in numbers, although their ranks have grown smaller over the years as more and more of them move on to chain status. This time there are 94 such companies, having two to four locations and serving a more or less local market area. There were 101 of these firms on the last list.

Single-house firms. Fewer and fewer of this type of electrical distributor appear among the largest electrical wholesalers in the U.S. every time we do a listing. Single-house distributors on the 1990 250 Biggest list number 20, down from 28 in 1988, 35 in 1986 and 44 in 1984.

Specialty distributors. These companies, such as wire and cable distributors and lighting specialists, tend to have multiple locations, but only one per state, a somewhat different pattern from traditional full-line electrical wholesalers. Eleven such companies are on this year's list.

The firms in this listing are ranked by number of employees because dollar volume, a more credible means by which to rank the firms, could not be obtained from every company. To rank a firm, we estimated the employee count if the distributor did not provide it. In cases where two or more distributors have the same number of employees, the ones who gave sales figures rank first. In the absence of sales figures, number of locations and floor space became the tie breakers.

To qualify a company for a spot in the ranking, only its electrical wholesale-related sales and employees count. But we do include specialized electrical wholesalers on the 250 Biggest list in recognition of their more and more visible role in the electrical wholesaling industry, witness Anixter Bros., a wire and cable distributor that moves up to No. 2 this year with $1.25 billion in U.S. sales in 1989 and 4,000 employees, and W.W. Grainger, a distributor of motors, motor controls, fans, blowers, hand and power tools, lighting fixtures and other electrical equipment, which ranks No. 6 on the list based on our estimates of the electrical component of its $1.7 billion in sales and 7,650 employees. □

COVER STORY

250
BIGGEST

The 250 biggest electrical distributors

RANK	COMPANY (Parent)	HEADQUARTERS	1989 SALES	ELECTRICAL EMPLOYEES	LOCATIONS	SQ FT (000)	PRESIDENT OR CEO
1	**Graybar Electric Co., Inc.**	St. Louis, MO	$1,899,000,000	4,764	197	5,730	E.A. McGrath
2	**Anixter Bros., Inc.*** (Itel Inc.)	Skokie, IL	1,250,000,000	4,000	146	NA	J. Pigott
3	**Consolidated Electrical Distributors, Inc.**	Westlake Village, CA	NA	3,700 e	300	NA	T. Monis
4	**Westinghouse Electric Supply Co.** (Westinghouse Electric Corp.)	Pittsburgh, PA	NA	3,000 e	225	5,200	J. Peretti
5	**General Electric Supply Co.** (GE Co.)	Bridgeport, CT	NA	2,300	130	NA	J.R. Stonesifer
6	**W.W. Grainger, Inc.***	Skokie, IL	500,000,000 e	2,200 e	331	10,193	D.W. Grainger
7	**All-Phase Electric Supply Co.**	Benton Harbor, MI	450,000,000	1,800	102	1,500	R.F. Kinney
8	**Consolidated Electric Supply, Inc.** (Willcox & Gibbs, Inc.)	Miami, FL	355,000,000	1,165	56	NA	W.E. Campbell
9	**Summers Group** (BTR, Inc.)	Dallas, TX	375,000,000	1,084	83	NA	W.K. Renwick
10	**Hughes Supply, Inc.**	Orlando, FL	185,000,000	900	40	NA	D. Hughes
11	**Crescent Electric Supply Co., Inc.**	East Dubuque, IL	NA	900 e	82	NA	J. Schmid
12	**EESCO, Inc.**	Chicago, IL	260,000,000	810	34	700	G. Murino
13	**Platt Electric Supply, Inc.**	Beaverton, OR	133,000,000	670	57	611	H.J. Platt
14	**Mayer Electric Supply Co., Inc.**	Birmingham, AL	157,700,000	580	32	470	C.A. Collat
15	**Cameron & Barkley Co. Electrical Div.** (Cameron & Barkley Co.)	Charleston, SC	161,000,000	494	30	550	R.C. Barkley, Jr.
16	**Stuart C. Irby Co.**	Jackson, MS	160,000,000	490	19	535	S.M. I[illegible]
17	**Dealers Electrical Supply Co.**	Waco, TX	NA	433	31	496	M.W. [illegible]acey
18	**Scott Electric Co.**	Greensburg, PA	NA	431	6	345	S. Scott
19	**Southern Electric Supply Co., Inc.** (International Technical Distributors)	Meridian, MS	100,000,000 +	425	32	400	R.M. [illegible]erson
20	**Raybro Electric Supplies, Inc.**	Tampa, FL	107,921,831	414	20	400	T.A. Brown, Jr.
21	**North Coast Electric Co.**	Bellevue, WA	NA	400 +	23	NA	P. [illegible]erko
22	**Branch Electric Co.** (Branch Group Inc.)	Forestville, MD	100,000,000 +	375	18	NA	C.M. Steiner
23	**State Electric Supply Co., Inc.**	Huntington, WV	NA	349	13	345	[illegible].A. Weisberg
24	**Kirby Risk Supply Co., Inc.**	Lafayette, IN	NA	312	17	250	J.K. Risk III
25	**Houston Wire & Cable Co.*** (Alltel Corp.)	Houston, TX	NA	300	12	400	J. Jennings
26	**Tristate Electrical Supply Co., Inc.**	Hagerstown, MD	98,400,000	288	22	NA	J.M. Waltersdorf
27	**Bryant Supply Co., Inc.**	Gastonia, NC	66,890,135	275	12	229	H.M. Bryant, Sr.
28	**Billows Electric Supply Co.**	Philadelphia, PA	60,000,000	270	5	100	J. Billow
29	**Ace Electric Supply Co.**	Jacksonville, FL	NA	265	23	263	B.W. Covington
30	**Noland Co.**	Newport News, VA	62,860,000	264 e	95	400	L.U. Noland III
31	**Warren Electric Co.**	Houston, TX	87,869,000	250	6	NA	R.V. Williams
32	**Maddux Supply Co.**	Greensboro, NC	NA	250 e	10	NA	J. Mathis
33	**Watson Electric Supply Co.**	Dallas, TX	NA	245	17	NA	M. Watson

The 250 biggest electrical distributors

RANK	COMPANY (Parent)	HEADQUARTERS	1989 SALES	ELECTRICAL EMPLOYEES	LOCATIONS	SQ FT (000)	PRESIDENT OR CEO
34	**Economy Electric Supply, Inc.**	Manchester, CT	$48,000,000	237	4	111	R.W. Weinberg
35	**Stusser Electric Co.**	Seattle, WA	62,000,000	235	12	220	H.C. Stusser
36	**Massachusetts Gas & Electric Light Supply Co.**	Boston, MA	NA	235	8	180	E.B. Weinreb
37	**Steiner Electric Company**	Elk Grove Village, IL	70,290,000	230	4	134	H.M. Kerman
38	**Bergenfield Lighting & Electrical Supplies**	Bergenfield, NJ	51,000,000	230	5	150	M. Calabrese
39	**Interstate Electric Supply Co., Inc.**	Chantilly, VA	51,500,000	221	13	198	F.J. Carr
40	**Brown Wholesale Electric Co.**	Sun Valley, CA	85,000,000	220	7	245	R. Brown
41	**Northern Wire and Cable, Inc.***	Troy, MI	41,481,091	220	5	106	R. Brzustewicz
42	**City Electric Supply of California**	Novato, CA	64,500,000	210	7	140	N. Wong
43	**Border States Electric Supply Co.** (Border States Industries)	Fargo, ND	NA	210	9	NA	P. Madson
44	**Eck Supply Co.**	Richmond, VA	47,500,000	205	12	NA	L.W. Burnley, Sr.
45	**Walters Wholesale Electric Co.**	Long Beach, CA	57,000,000	200	9	95	J.L. Walter
46	**Penn Electric Supply Group**	Philadelphia, PA	51,000,000	200	5	200	S. Cooperstein
47	**Madison Electric Co.**	Detroit, MI	NA	198	10	200	J. Schneider
48	**McNaughton-McKay Electric Co.**	Madison Heights, MI	150,000,000	190	5	200	W.W. Bull
49	**Tvesco, Inc.**	Memphis, TN	80,000,000+	190	11	200	J.D. Liles
50	**Mack Electric Supply Co., Inc.**	Dothan, AL	58,531,000	190	6	190	D.F. McMullan
51	**Wholesale Electric Supply Co. of Houston, Inc.**	Houston, TX	98,000,000	188	3	150	C.G. Rutland
52	**Maurice Electrical Supply Co., Inc.**	Washington, DC	71,698,227	185	4	130	B.S. Green
53	**Lappin Electric Co.**	Milwaukee, WI	47,300,000	185	10	270	R.T. Lappin
54	**Evergreen Oak Electric Supply & Sales Co., Inc.**	Crestwood, IL	32,000,000	185 e	5	70	R.B. Caesar
55	**Electric Supply Co., Inc.**	Raleigh, NC	NA	185	10	293	K.D. Kennedy, Jr.
56	**Cummins Supply Co.** (Cummins Corp.)	Ft. Worth, TX	60,267,068	184	10	150	C. Cummins
57	**Stanion Wholesale Electric Co.**	Pratt, KS	NA	182	16	NA	T. Stanion
58	**Electrical Equipment Co.**	Raleigh, NC	43,135,081	181	9	127	R.L. Hedgepeth
59	**Eoff Electric Co.**	Salem, OR	55,000,000+	180	5	171	J. Eoff
60	**Richards Electric Supply Co., Inc.**	Cincinnati, OH	52,500,000	180	7	120	I.S. Misrach
61	**Viking Electric Supply, Inc.**	St. Paul, MN	NA	180	9	NA	J. Schacker
62	**United Electric Supply Co., Inc.**	New Castle, DE	NA	180	7	NA	N.R. Gianoulis
63	**American Electric Company** (SDI Operating Partners, L.P.)	St. Joseph, MO	NA	179	15	391	B. Cornelius
64	**Seattle Lighting & Fixture Co.***	Seattle, WA	NA	175 e	8	NA	P. Alexander
65	**Gamarel Electric Supply Co., Inc.**	Irvington, NJ	NA	175	2	NA	H. Gamarel
66	**Sacks Electrical Supply Co.** (UIS Inc.)	Akron, OH	63,698,000	174	3	190	M.D. Sacks
67	**Ralph Pill Electric Supply Co.**	Boston, MA	NA	172	15	180	A.E. Pill
68	**Independent Electric Supply, Inc.**	San Carlos, CA	NA	170 e	6	114	R.F. Hurd
69	**Turtle & Hughes, Inc.**	Linden, NJ	76,000,000	165	4	NA	S.T. Millard
70	**Kriz-Davis Co.**	Grand Island, NE	52,000,000	160	10	164	M.H. Gosda
71	**Nunn Electric Supply Corp.**	Amarillo, TX	33,500,000	152	12	173	C.D. Hare
72	**King Wire & Cable Corp.***	Jamaica, NY	50,000,000+	150	5	300	R. Dorfman
73	**Wehle Electric Co., Inc.**	Buffalo, NY	34,000,000	150	4	100	A.J. Dachauer
74	**Norcal Electric Supply, Inc.**	Redding, CA	NA	150	13	116	F. Schoradt
75	**Fromm Electric Supply Corp.**	Piscataway, NJ	NA	150	4	109	D. Berman
76	**Uhr Electric Supply Co., Inc.**	Cherry Hill, NJ	50,000,000	145	4	NA	E. Uhr
77	**Springfield Electric Supply Co.**	Springfield, IL	42,762,000	145	6	155	W.R. Schnirring
78	**Fitzpatrick Electric Supply Co., Inc.**	Muskegon, MI	NA	145	6	158	L.P. Carlson
79	**Northland Electric Supply Co.**	Minneapolis, MN	49,100,000	144	6	180	J.M. Vilett
80	**The Hite Co.**	Altoona, PA	30,400,000	142	11	210	R.L. Hite
81	**Standard Electric Co.**	Bangor, ME	NA	140	9	NA	R. Stone

RANK	COMPANY (Parent)	HEADQUARTERS	1989 SALES	ELECTRICAL EMPLOYEES	LOCATIONS	SQ FT (000)	PRESIDENT OR CEO
82	**Braid Electric Company**	Nashville, TN	NA	140	8	150	B.S. Gambill, Jr.
83	**Electrical Wholesalers**	Hartford, CT	NA	140	6	70	H. Namerow
84	**Revere Electric Supply Co.**	Chicago, IL	NA	140	4	120	T. Eiseman
85	**Dominion Electric Supply Co., Inc.**	Arlington, VA	NA	140	4	107	T. Eiseman
86	**Ryall Electric Supply Co.**	Denver, CO	NA	138	5	159	G.A. Wilson
87	**Standard Electric Supply Co., Inc.**	Wilmington, MA	$39,000,000	137	3	85	A.J. Brand
88	**Moore Electric Supply Inc.**	Charlotte, NC	51,775,833	135	5	94	J.V. Moore
89	**Debenham Electric Supply Co., Inc.**	Anchorage, AK	39,000,000	135	10	161	R.G. Debenham
90	**Tecot Electric Supply Co., Inc.**	Wilmington, DE	29,000,000	130	5	105	F. Lewandowski
91	**Pacific Electrical Supply, Inc.**	San Leandro, CA	NA	130	6	108	A.P. Russello III
92	**Maynard's Electric Supply, Inc.**	Rochester, NY	NA	130	3	136	B. Hellman
93	**Elliott Electric Supply, Inc.**	Nacogdoches, TX	21,426,447	125	11	NA	B. Elliott
94	**Electric Supply Co. of Asheville, Inc.**	Asheville, NC	NA	125	12	326	G. Winner
95	**Plainsco, Inc.**	Aberdeen, SD	NA	125 e	6	250	R. Rickel
96	**Friedman Electric Group, Inc.**	Exeter, PA	NA	125	6	NA	S. Friedman
97	**Rumsey Electric Co.**	Philadelphia, PA	44,000,000	124	4	115	W.J. DiBui
98	**The John A. Becker Co.**	Dayton, OH	39,200,000	123	2	81	T.E. Becker
99	**Stoneway Electric Supply**	Seattle, WA	33,000,000	123	8	134	E.E. Ralph
100	**J.H. Larson Electrical Co.**	Golden Valley, MN	31,000,000	121	6	116	C.E. Pahl
101	**Dardanella Electric Corp.**	Arcadia, CA	50,219,151	120	9	105	W.W. Hoban
102	**Keathley-Patterson Electric Co.** (SDI Operating Partners, L.P.)	N. Little Rock, AR	30,000,000	120	12	120	R.J. Wilson
103	**United Electric Supply Co.**	St. Louis, MO	NA	120	6	103	J. Brown
104	**Cooper Electric Supply Co.**	Middletown, NJ	34,800,000	118	3	58	R.A. Cooper
105	**Cardello Electric Supply Co.**	Pittsburgh, PA	24,000,000	118	10	NA	N.R. Cardello
106	**Hobb Electrical Supply** (Holt Electrical Distribution Corp.)	New York, NY	23,000,000	117	1	NA	P. Hillstrom
107	**Kendall Electric, Inc.**	Battle Creek, MI	NA	115	5	NA	C. Kodis
108	**Electric Specialty & Supply Corp.**	Boston, MA	37,890,000	114	6	175	W.L. Gray
109	**Battey Machinery Co.**	Rome, GA	NA	114	4	125	E.L. Yeargan, Jr.
110	**Valley Electric Co. of Stockton**	Stockton, CA	NA	114	3	120	H.L. Dempsey, Jr.
111	**Commerce Electric Supply Co.**	Linthicum, MD	NA	111	11	150	M. Lessans
112	**Kennedy Electrical Supply Corp.**	Jamaica, NY	32,500,000	110	2	60	M. Berken
113	**Dauphin Electric Supply Co.** (Dauphin Associates, Inc.)	Harrisburg, PA	31,000,000	110	4	100	E.T. Girvin
114	**Wolff Bros. Supply Inc.**	Medina, OH	24,750,000	110	4	108	H.E. Wolff
115	**McJunkin Corp.**	Charleston, WV	NA	110	10	NA	H.B. Wehrle III
116	**Villa Lighting Supply Co., Inc.***	St. Louis, MO	NA	110	3	110	J.A. Villa
117	**Butler Supply, Inc.**	St. Louis, MO	20,000,000	108	12	150	R.E. Butler
118	**Taylor Electric Supply Inc.**	Portland, OR	34,000,000	105	1	100	W. Klein
119	**Hartford Electric Supply Co. (HESCO)**	West Hartford, CT	27,000,000 +	105	4	75	B. DePasquale
120	**Coast Electric Co.** (TFI Building Materials, Inc.)	San Diego, CA	35,000,000	103	5	160	T.J. Grant
121	**Kulwin Electric Supply Co., Inc.**	Indianapolis, IN	32,000,000	103	7	92	H. Kulwin
122	**Philips & Co.** (SDI Operating Partners, L.P.)	Columbia, MO	NA	102	9	NA	H.J. Cornelius
123	**Fromm Electric Supply Corp. of Reading**	Reading, PA	NA	102	3	75	B. Fromm
124	**Associated of Los Angeles**	Los Angeles, CA	25,000,000	100	2	42	C.D. Russell, Jr.
125	**Jarvis Electric Supply Co., Inc.**	Los Angeles, CA	24,077,000	100	1	42	L.W. Jarvis
126	**City Hall Electrical Supply, Inc.**	Providence, RI	22,000,000	100	5	90	C.E. Robbins, Jr.
127	**Eagle Electric Supply Co., Inc.**	Boston, MA	NA	100	2	35	S. Kaplan
128	**Shealy Electrical Wholesalers, Inc.**	Greenville, SC	33,000,000	99	3	75	J.S. DeLoache
129	**Summit Electric Supply Co., Inc.**	Albuquerque, NM	31,000,000	99	4	68	V.R. Jury, Sr.
130	**West Chester Electric & Electronics, Inc.**	West Chester, PA	24,657,931	99	2	65	L. Traines
131	**Matthews Electric Supply Co., Inc.**	Birmingham, AL	NA	99	5	102	W.H. Cole
132	**Georgia Lighting Supply Co., Inc.***	Atlanta, GA	17,100,000	98	3	67	H.L. Gilham, Jr.
133	**Power/Mation Div.*** (Craighead & Associates)	St. Paul, MN	NA	98	6	37	D.N. Alcock
134	**Reily Electrical Supply Inc.**	New Orleans, LA	NA	98	4	93	T.S. Reily
135	**Electrical Suppliers, Inc.**	Norfolk, VA	25,116,941	96	3	72	W.W. Old
136	**Harry Cooper Supply Co.** (C.B. Management Co., Inc.)	Springfield, MO	22,990,000	94 e	2	NA	S.R. Reagan
137	**ESSCO Wholesale Electric**	Anaheim, CA	NA	94	12	NA	T. Tapia
138	**Medler Electric Co.**	Alma, MI	NA	94	8	75	W. Leuth
139	**Hunzicker Brothers, Inc.**	Oklahoma City, OK	NA	93	5	105	W.T. Hunzicker
140	**Fischer-Flack, Inc.**	Saginaw, MI	NA	93	5	NA	R. Tiderington
141	**Dixie Electric Supply Corp.**	Richmond, VA	26,593,000	92	2	55	J.F. Alexander

The 250 biggest electrical distributors

RANK	COMPANY (Parent)	HEADQUARTERS	1989 SALES	ELECTRICAL EMPLOYEES	LOCATIONS	SQ FT (000)	PRESIDENT OR CEO
142	**Denney Electric Supply**	Ambler, PA	$23,200,000	92	8	120	B.H. Denney
143	**Grand Light & Supply Co., Inc.**	New Haven, CT	NA	92	3	72	S. Stockman
144	**Stokes Electric Co.**	Knoxville, TN	25,500,000	90	3	100	R.E. Lay, Sr.
145	**McDonald Distributors of Florida, Inc.**	Ft. Lauderdale, FL	24,425,000	90	5	111	R.W. Long
146	**Capital Wholesale Electric Co.**	Sacramento, CA	NA	90e	3	NA	F. Ghilarducci
147	**The F.D. Lawrence Electric Co.**	Cincinnati, OH	40,770,722	89	4	82	P.F. Bodde
148	**Fluorescent Supply Co.**	Harrisburg, PA	NA	89	3	NA	F. Bloom
149	**Benfield Electric Supply Co., Inc.**	White Plains, NY	28,000,000	88	2	NA	R.C. Kohli
150	**Standard Electric Co.**	Saginaw, MI	NA	88	8	115	L.N. Weber
151	**Rockingham Electrical Supply Co., Inc.**	Newington, NH	NA	88	5	105	J.E. Pender
152	**Morristown Electrical Supply Co.**	Morristown, NJ	NA	88	3	50	R. Hirsch
153	**Capital Lighting & Supply, Inc.**	Alexandria, VA	31,173,000	86	2	47	L.H. Duckett
154	**B & K Electric Wholesale**	City of Industry, CA	20,000,000	86	4	77	K. Kindrick
155	**Mosebach Electric & Supply Co.**	Pittsburgh, PA	NA	86	5	71	R.M. Nadler
156	**Electric Fixture & Supply Co.**	Omaha, NE	NA	86	4	70	G. Rohde
157	**Franklin Electric Co.**	Atlantic City, NJ	21,000,000	85	8	79	E.R. Lowenstein
158	**The Kiemle-Hankins Co.**	Toledo, OH	NA	85	3	NA	A.S. Martindale
159	**Seamans Supply Co., Inc.**	Manchester, NH	NA	85	4	NA	D.G. March
160	**Electrical Distributors, Inc.**	Atlanta, GA	NA	85	1	38	D.C. Martin
161	**York Electrical Supply Co.**	York, PA	23,682,000	84	2	60	J.G. Livingston
162	**Electric Supply, Inc.**	High Point, NC	20,000,000	84	7	93	J.G. Hunt
163	**Basic Distribution Corp.**	Columbus, OH	NA	84	6	76	A. Kerr
164	**Sterling Electric Co.**	Minneapolis, MN	NA	84	3	68	D. Lindquist
165	**Gross Electric, Inc.**	Toledo, OH	14,828,000	83	4	65	R. Gross
166	**Electrical Insulation Suppliers, Pacific Div.*** (Electrical Insulation Suppliers, Inc.)	San Jose, CA	NA	82	12	200	J.F. Rodgers
167	**Holmes Distributors, Inc.**	Portland, ME	NA	82	5	NA	B. Andrews
168	**The Capitol Light and Supply Co.**	Hartford, CT	27,500,000	80	3	80	M.B. Cartin
169	**Shepherd Electric Supply Co., Inc.**	Goldsboro, NC	18,000,000	80	5	NA	D.B. Shepherd
170	**West Virginia Electric Supply Co.**	Huntington, WV	16,031,158	80	4	70	J. Colker
171	**Splane Electric Supply Co.**	Detroit, MI	NA	80	4	100	A. Swartzenberg
172	**Cadillac Electric** (Premier Industrial Corp.)	Oak Park, MI	NA	80e	3	NA	J. Green
173	**Major Electric & Supply, Inc.**	Pawtucket, RI	NA	80	1	49	D.E. Levin
174	**K & M Electric Supply, Inc.**	Riviera Beach, FL	NA	79	5	57	W.K. Mooney
175	**Evans Electrical Supply, Inc.**	Baton Rouge, LA	24,000,000	78	3	90	A.D. Womack
176	**The Electric Supply Co.**	Atlanta, GA	21,000,000	78	4	66	H.W. Shropshire
177	**Franklin Electric Co.**	Philadelphia, PA	25,000,000	77	1	95	W.T. Walker III
178	**Wholesale Electric Supply Corp.**	Vestal, NY	31,000,000	76	3	54	J. Matthews
179	**County Wholesale Electric Co., Inc.**	Orange, CA	24,500,000	76	2	45	R.S. Roberts
180	**Granite City Electric Supply Co.**	Quincy, MA	NA	76	4	75	P.P. Godwin
181	**Hunt Electric Supply Co.**	Burlington, NC	16,000,000	75	9	NA	S. Hunt
182	**Electric Supply of Salinas**	Salinas, CA	15,000,000	75	7	60	J.L. Zabala, Sr.
183	**Roden Electrical Supply Co.**	Knoxville, TN	NA	75	6	98	S. McCamy
184	**Coleman Electrical Supply Co., Inc.**	Brooklyn, NY	NA	75	5	45	S. Coleman
185	**Royalite Co.**	Flint, MI	NA	75	3	68	G.B. Gottlieb
186	**Raymond de Steiger, Inc.**	Sterling Heights, MI	NA	75	3	60	R. de Steiger
187	**Peerless Electric Supply Co.**	Indianapolis, IN	NA	74	4	100	B.A. Butz
188	**The H. Leff Electric Co.**	Cleveland, OH	NA	74	3	92	S.L. Leff, Jr.
189	**The Furbay Electric Supply Co.**	Canton, OH	NA	73	5	73	T.A. Furbay
190	**Ackerman Electrical Supply Co.**	Grand Rapids, MI	NA	73	2	40	C. Kodis
191	**Hampden Zimmerman Electric Supply**	Springfield, MA	21,500,000	72	2	70	R. Sanborn

RANK	COMPANY (Parent)	HEADQUARTERS	1989 SALES	ELECTRICAL EMPLOYEES	LOCATIONS	SQ FT (000)	PRESIDENT OR CEO
192	**Advance Electric Supply Co., Inc.**	Flint, MI	$21,783,540	71	1	91	J.A. Smock
193	**Square Electric Supply Co.**	Parsippany, NJ	25,000,000	70	2	30	H.W. Cohen
194	**The Loeb Electric Co.**	Columbus, OH	24,000,000 +	70	3	65	C. Loeb
195	**ReQua Electrical Supply Co.** (RERO Distribution Companies)	Rochester, NY	19,883,000	70 e	2	31	J.R. Wilson
196	**Schaedler Bros., Inc.**	Harrisburg, PA	19,000,000	70	3	80	J.D. Schaedler
197	**Industrial Electric Service Co.**	Arcata, CA	11,000,000	70	5	72	R.H. Nicholson
198	**Teche Electric Supply, Inc.**	Lafayette, LA	NA	70	9	120	M.G. Hays
199	**Empire Electric Supply Co.**	Rochester, NY	NA	70	3	65	S.B. Cutler
200	**The Reynolds Co.**	Dallas, TX	NA	70	3	36	D. Reynolds
201	**Fife Electric Company**	Novi, MI	NA	70	2	70	B.S. Smith
202	**Active Electrical Supply Co.**	Chicago, IL	NA	70	1	25	H.C. Fox
203	**The Starbuck Sprague Co.**	Waterbury, CT	16,000,000	68	1	40	H.W. Schultze
204	**Edward Joy Co.**	Syracuse, NY	NA	68 e	1	65	L. Markert, Jr.
205	**Armstrong Pacific Corp.**	Downey, CA	14,532,000	67	3	57	B. Armstrong
206	**Brock-McVey Supply Co.** (A.Y. McDonald Industries, Inc.)	Lexington, KY	NA	66 e	5	NA	J. McDonald III
207	**Reese Supply Co.***	Irving, TX	NA	66	4	NA	R. Reese
208	**Electrical Engineering & Equipment Co.**	Des Moines, IA	NA	66	1	75	J.J. Myers
209	**Temple, Inc.***	Dallas, TX	45,000,000	65	7	150	R.J. Morrison
210	**Shepherd Electric Co., Inc.**	Baltimore, MD	25,000,000	65	1	61	C.C. Vogel III
211	**K.J. Electric Corp.***	Syracuse, NY	10,000,000	65	3	154	K.E. Jacobs
212	**Minnesota Electric Supply Co.**	Willmar, MN	NA	65	5	100	S. Linder
213	**Monarch Electric Co.**	Fairfield, NJ	NA	65 e	2	22	M. Pilger
214	**Electric Supply and Equipment Co., Inc.**	Greensboro, NC	20,000,000 +	64	3	36	D.G. Smith
215	**Maltby Electric Supply Co., Inc.**	San Francisco, CA	16,000,000	64	3	50	J.A. Maltby
216	**Michigan Chandelier Co.**	Southfield, MI	14,200,000	64	5	NA	E. Berne
217	**Grote Lighting & Supply Co., Inc.***	Indianapolis, IN	NA	64	8	NA	T.E. Grote
218	**Professional Electric Products Co. (PEPCO)**	Eastlake, OH	30,000,000	63	2	78	J.H. Borkey
219	**Lowe Electric Co.**	Macon, GA	14,500,000	63	3	55	J.W. Kinman, Sr.
220	**Wolberg Electrical Supply Co., Inc.**	Albany, NY	NA	63	2	54	M. Bindell
221	**Coghlin Electric/Electronics Inc.** (Coghlin Companies Inc.)	Worcester, MA	NA	62	2	60	J.W. Coghlin
222	**Alameda Electrical Distributors, Inc.**	Hayward, CA	NA	61	2	48	R. LaRue
223	**Avon Electrical Supplies, Inc.**	Hauppague, NY	47,000,000	60	2	45	K. Moskowitz
224	**Ever Ready Electric Supply, Inc.**	Los Angeles, CA	20,000,000	60	1	40	M.M. Ferris
225	**Lee Electric Co. of Baltimore City**	Baltimore, MD	18,500,000	60	1	62	B.L. Langeluttig
226	**M & M Lighting, Inc.**	Houston, TX	15,000,000	60	2	50	J. Margolin
227	**Voss Electric Supply Co.***	Lincoln, NE	10,000,000 +	60 +	6	NA	M.H. Voss
228	**Wholesale Supply Group, Inc.**	Cleveland, TN	9,243,160	60 e	15	NA	L.D. Rogers
229	**Meletio Electrical Supply Co.**	Dallas, TX	8,000,000	60	3	101	J. Meletio
230	**Memphis Lamp Co.***	Memphis, TN	NA	60	6	NA	D.M. Marrs
231	**Heintz Electric Co.**	Quincy, IL	NA	60	5	NA	D. Craven
232	**Griffith Electric Supply Co., Inc.**	Trenton, NJ	NA	60	1	70	M.A. Griffith
233	**ANESCO**	Kingston, PA	NA	60	1	40	G.S. Fierman
234	**The H. Poll Electric Co.**	Toledo, OH	22,623,000	59	4	75	R.W. Poll
235	**Hallmark Electrical Supplies Corp.** (LVI Corp.)	Brooklyn, NY	9,500,000	57	1	50	T. Ahrens
236	**St. Louis-Metro Electric Supply, Inc.**	St. Louis, MO	NA	57 e	8	NA	J.O. Frisella
237	**I.G. Federal Electrical Supply Corp.**	Long Island City, NY	22,000,000 +	56	1	32	S.J. Friedman
238	**Kiefer Electrical Supply Co.**	Peoria, IL	NA	56	3	100	W.A. Kiefer
239	**Loyal Supply Corp.**	Albany, NY	15,000,000	55	3	60	J.D. Fluster
240	**Forest City Electric Supply Co.**	Rockford, IL	14,000,000	55	4	57	S.T. Elrick
241	**Romac Supply Co.***	City of Commerce, CA	10,000,000	55	3	150	D.B. Rosenfield
242	**Northern Light & Supply Co.**	Pittsburgh, PA	8,500,000	55	2	55	J. Latterman
243	**Peebles Supply Corp.** (Ferguson Enterprises, Inc.)	Newport News, VA	NA	55	7	NA	J.W. Allen
244	**ENSCO Supply Co.** (Industrial Distribution Group)	Greensboro, NC	NA	55	4	NA	C. Lingenfelter
245	**Sheridan Royalite Inc.***	Amherst, NY	NA	55	2	23	D. Gottesman
246	**Mid West Wholesale Lighting***	Los Angeles, CA	NA	55 e	1	30	M. Frandzel
247	**Crum Electric Supply Co., Inc.**	Casper, WY	NA	54	5	51	D.H. Crum
248	**Farrell-Argast Electric Co., Inc.**	Indianapolis, IN	14,782,600	53	2	28	A.M. Quigley
249	**Nu-Lite Electrical Wholesalers, Inc.**	Harahan, LA	17,000,000	52	4	54	F.J. Corales, Jr.
250	**Helsel-Jepperson Electrical, Inc.**	Chicago Heights, IL	10,000,000 +	52	1	37	D. Helsel

e—estimated by the editors of ELECTRICAL WHOLESALING *—specialized electrical wholesaler

ALPHABETICAL GUIDE TO THE 250 BIGGEST

250
BIGGEST

Company	Rank
Ace Electric Supply Co.	29
Ackerman Electrical Supply Co.	190
Active Electrical Supply Co.	202
Advance Electric Supply Co., Inc.	192
Alameda Electrical Distributors, Inc.	222
All-Phase Electric Supply Co.	7
American Electric Company	63
ANESCO	233
Anixter Bros., Inc.	2
Armstrong Pacific Corp.	205
Associated of Los Angeles	124
Avon Electrical Supplies, Inc.	223
B & K Electric Wholesale	154
Basic Distribution Corp.	163
Battey Machinery Co.	109
Benfield Electric Supply Co., Inc.	149
Bergenfield Lighting & Electrical Supplies	38
Billows Electric Supply Co.	28
Border States Electric Supply Co.	43
Braid Electric Company	82
Branch Electric Co.	22
Brock-McVey Supply Co.	206
Brown Wholesale Electric Co. (Excel)	40
Bryant Supply Co., Inc.	27
Butler Supply, Inc.	117
Cadillac Electric	172
Cameron and Barkley Co. Electrical Div.	15
Capital Lighting & Supply, Inc.	153
Capital Wholesale Electric Co.	146
Cardello Electric Supply Co.	105
City Electric Supply of California	42
City Hall Electrical Supply, Inc.	126
Coast Electric Co.	120
Coghlin Electric/Electronics Inc.	221
Coleman Electrical Supply Co., Inc.	184
Commerce Electric Supply Co.	111
Consolidated Electric Supply, Inc.	8
Consolidated Electrical Distributors, Inc.	3
Cooper Electric Supply Co.	104
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Crum Electric Supply Co., Inc.	247
Cummins Supply Co.	56
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Dauphin Electric Supply Co.	113
Dealers Electrical Supply Co.	17
Debenham Electric Supply Co., Inc.	89
Denney Electric Supply	142
Dixie Electric Supply Corp.	141
Dominion Electric Supply Co., Inc.	85

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Economy Electric Supply, Inc.	34
Edward Joy Co.	204
EESCO, Inc.	12
Electric Fixture & Supply Co.	156
Electric Specialty & Supply Corp.	108
Electric Supply, Inc.	162
Electric Supply and Equipment Co., Inc.	214
Electric Supply Co., Inc.	55
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Ever Ready Electric Supply, Inc.	224
Evergreen Oak Electric Supply & Sales Co., Inc.	54
Farrell-Argast Electric Co., Inc.	248
Fife Electric Company	201
Fischer-Flack, Inc.	140
Fitzpatrick Electric Supply Co., Inc.	78
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Franklin Electric Co.	157
Friedman Electric Group, Inc.	96
Fromm Electric Supply Corp.	75
Fromm Electric Supply Corp. of Reading	123
Gamarel Electric Supply Co., Inc.	65
General Electric Supply Co.	5
Georgia Lighting Supply Co., Inc.	132
Grand Light & Supply Co., Inc.	143
Granite City Electric Supply Co.	180
Graybar Electric Co., Inc.	1
Griffith Electric Supply Co., Inc.	232
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Roden Electrical Supply Co.	183
Romac Supply Co.	241
Royalite Co.	185
Rumsey Electric Co.	97
Ryall Electric Supply Co.	86
Sacks Electrical Supply Co.	66
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Scott Electric Co.	18
Seamans Supply Co., Inc.	159
Seattle Lighting & Fixture Co.	64
Shealy Electrical Wholesalers, Inc.	128
Shepherd Electric Co., Inc.	210
Shepherd Electric Supply Co., Inc.	169
Sheridan Royalite Inc.	245
Southern Electric Supply Co., Inc.	19
Splane Electric Supply Co.	171
Springfield Electric Supply Co.	77
Square Electric Supply Co.	193
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Standard Electric Co.	150
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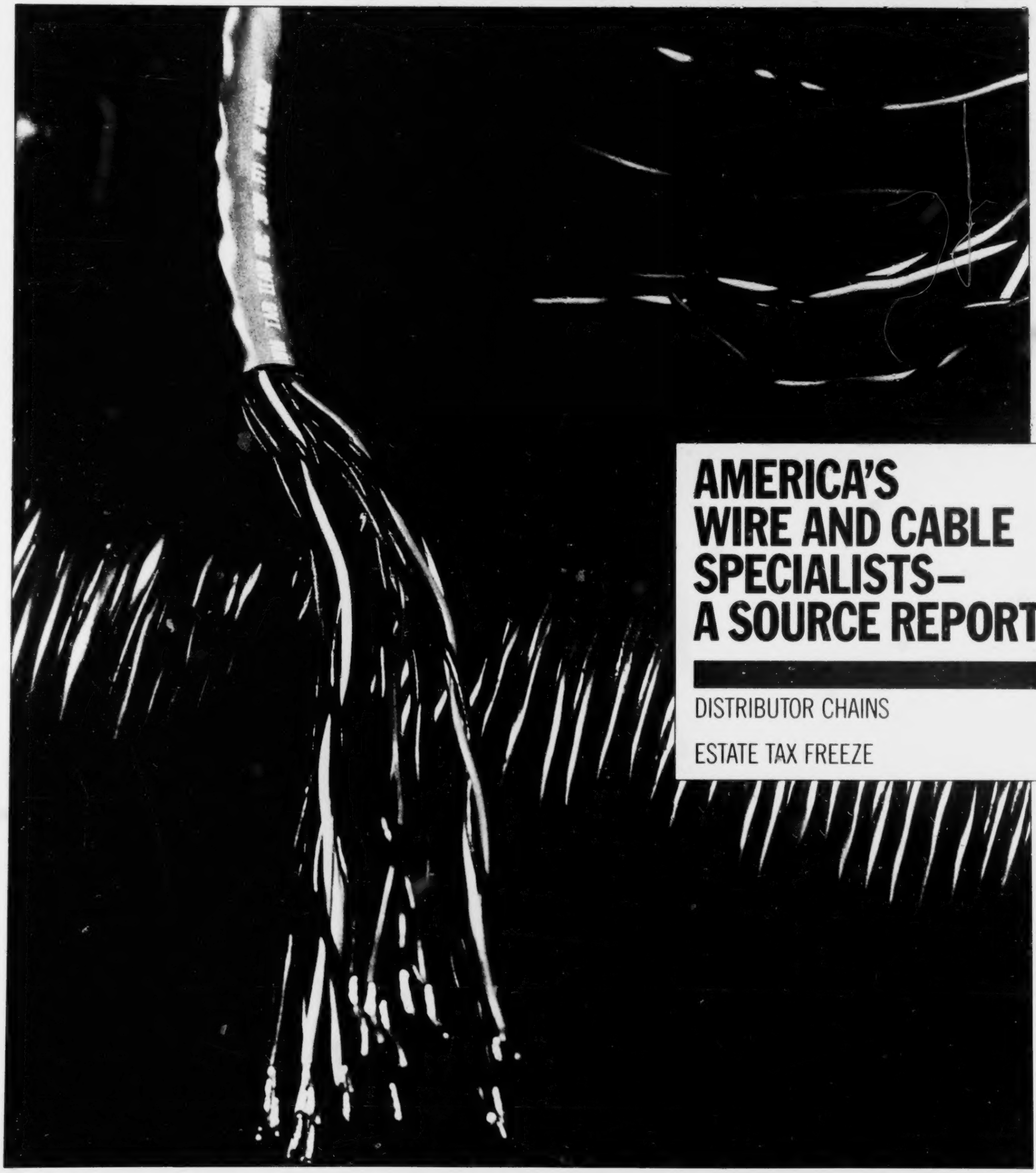
ELECTRICAL WHOLESALING



AMERICA'S WIRE AND CABLE SPECIALISTS– A SOURCE REPORT

DISTRIBUTOR CHAINS

ESTATE TAX FREEZE

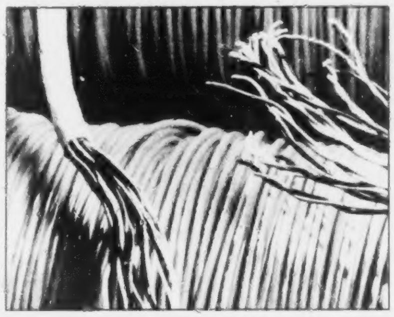
VOLUME 71
NUMBER 7

ELECTRICAL WHOLESALING

JULY
1990

FEATURES

COVER STORY



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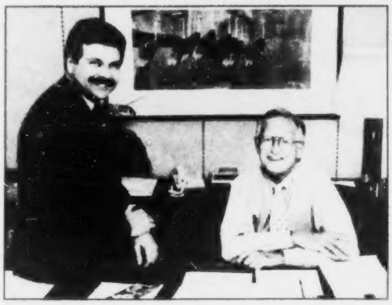

Richard Hathaway (left) and John Behmke

With this Publisher's Note, I am announcing my retirement as of July 1. I am taking leave of my job to give more time to my family and move to the West Coast.

The next Publisher's Note you read will be from Richard A. Hathaway, who succeeds me as group publisher of Intertec Publishing Corp.'s electrical magazine group.

The change will be imperceptible. I say this simply because Rich and I have worked so closely together over the past three-and-a-half years to improve ELECTRICAL WHOLESALING. We strive constantly to give our readers all the benefits of a dedicated magazine with a strong, independent voice in the industry.

I know personally how devoted Rich Hathaway is to maintaining that charter. He has helped to build the quality of the magazine and its wonderful staff, and he is the natural successor to the publisher's job.

Rich started his career in the magazine business some 20 years ago when he took a job as an editor. He was managing editor of *Industrial Distributor News* magazine for three years, and in 1978 joined McGraw-Hill as an advertising salesperson. In 1982, Rich joined the sales staff of *EC&M*. He accepted a management position in 1986 and was named associate publisher in January 1989.

"Seasoned" is the word for Rich. With 20 years in the publishing business, he is more than qualified to deal with the challenges in this new decade. He has both the reader and advertiser interests at heart. I am pleased to leave you in such capable hands.

John G. Behmke
JOHN G. BEHMKE

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INDUSTRY TREND

CHAIN REPORT

ELECTRICAL DISTRIBUTOR CHAINS CONTINUE TO MULTIPLY AND EXTEND THEIR REACH.

■ Ever since the branch growth among independent electrical distributors got underway in the 1950s, chain watching has been an industry pastime. The chains, from those with coast-to-coast branch networks to those that barely qualify for chain status with five houses, command a sometimes disproportionate amount of attention from suppliers and fellow distributors alike.

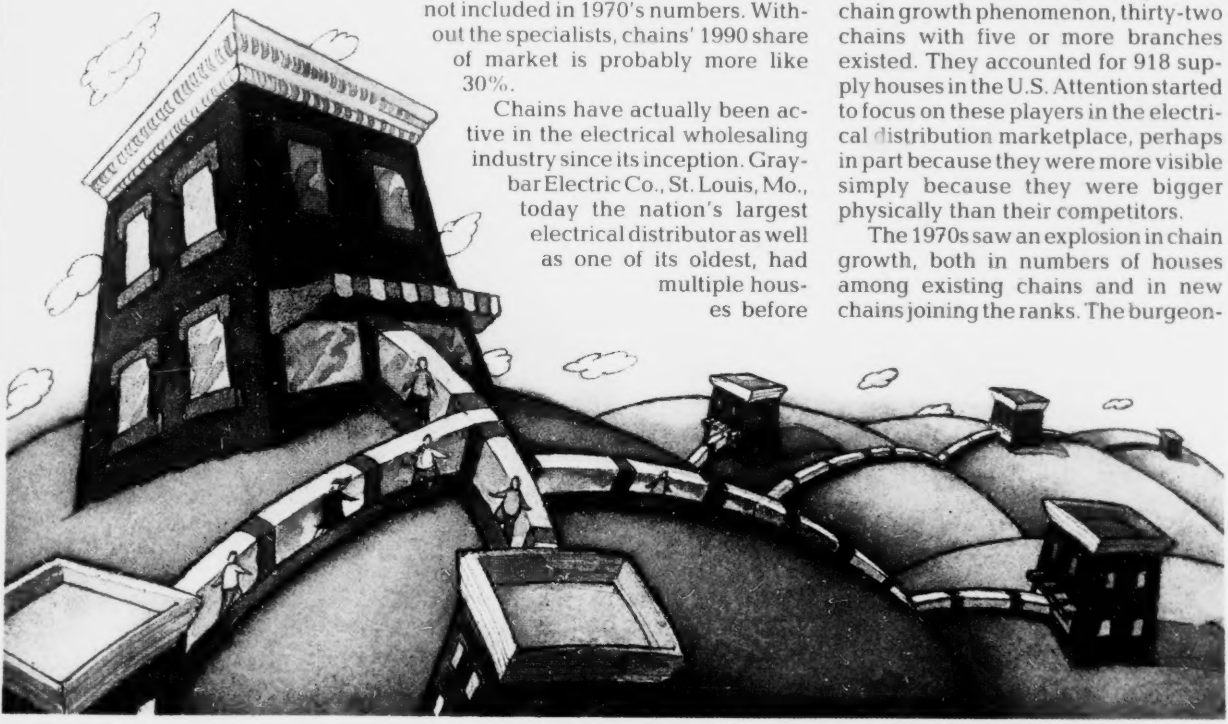
It's easy to see why. In just 20 years, the number of electrical distributor chains has risen from approximately 30 to at least 155 today. A less known—and more telling—fact is that in spite of the dramatic increase in the number of chains, their share of industry sales has not risen at all. It stood at 33% in 1970 and appears to be about 33% today, too. And the only reason the market share comes in that high in 1990 is the addition to the figures of specialized chains, such as wire and cable distributors like Houston Wire and Cable Inc., Houston, Tex., with 12 houses. Such companies were not considered part of the industry scene in 1970—a number of them didn't even exist at that time—and their sales are not included in 1970's numbers. Without the specialists, chains' 1990 share of market is probably more like 30%.

By Andrea Herbert, Chief Editor

Chains have actually been active in the electrical wholesaling industry since its inception. Graybar Electric Co., St. Louis, Mo., today the nation's largest electrical distributor as well as one of its oldest, had multiple houses before World War I. The two manufacturer-owned chains, Westinghouse Electric Supply Co. (WESCO), Pittsburgh, Pa., and GE Supply Co., Bridgeport, Conn., started forming their networks in the 1920s.

The first few independent chains, regional in nature, came into being both before and after World War II. But it was not until the 1950s, with the post-war expansion, that significant growth in numbers of chains started to take place. By the 1960s chains had become factors in many of the key trading areas in the U.S. By the early 1970s, when ELECTRICAL WHOLESALING first started reporting on the chain growth phenomenon, thirty-two chains with five or more branches existed. They accounted for 918 supply houses in the U.S. Attention started to focus on these players in the electrical distribution marketplace, perhaps in part because they were more visible simply because they were bigger physically than their competitors.

The 1970s saw an explosion in chain growth, both in numbers of houses among existing chains and in new chains joining the ranks. The burgeon-



ing of chain networks continued into the 1980s, giving rise to a new type, the super-regional chain. These firms spread their branches beyond one definable region, but stop short of being a truly "national" chain.

In the 1980s, a combination of factors contributed to the continued growth of chains. On the one hand, there were numerous companies available for sale—from one-house firms to large chains. Difficult business conditions—including back-to-back recessions and extended low inflation/slow growth—led a number of distributors into failure and prompted others to think seriously about getting out of the business. Likewise, a growing number of firms begun after World War II whose owners were going into retirement brought more companies onto the market that were available for purchase.

On the other hand, there were ready buyers as distributors developed an awareness of the need to be bigger. By achieving a certain critical mass, they could afford the computer systems and support services necessary to serve customers. Also, the emergence of buying groups on the industry scene seemed to fuel the desire to be bigger on the part of chains, whose clout the buying groups had set out to counter. In another vein, foreign investors discovered electrical distribution in the 1980s, bringing new buyers for wholesalers' businesses. These factors and more contributed to stepped-up branch growth and acquisition in recent years.

Today in 1990, the count of companies that operate as chains has reached at least 155, and there are undoubtedly some we've left out because they reached chain status without coming into our information sources. The specialized electrical distributor chains are especially difficult to track down; the listing here is definitely only a partial one. Combined, the chains listed on the following pages do an estimated $13 billion-plus in sales. They account for roughly 33% of electrical wholesaling industry sales, which approached $40 billion in 1989, and control 3,163 houses nationwide.

On the following pages, ELECTRICAL WHOLESALING lists most of the known chains active in the industry, by name and location. (For the most part, we do not include chains that sell electrical goods as a minor part of their business. Neither do we include chains within chains.) With the information in this article, it is possible to compare chains as to the size of their networks and their geographic coverage.

Also included for informational purposes are the companies' number of employees and 1989 sales volume, both for electrical products only. In some cases, the employee figures have been estimated by ELECTRICAL WHOLESALING, either because the firm supplied no employee data directly or because the distributorship does only a portion of its business in electrical supplies.

The chains are grouped in the accompanying table by what could be considered their philosophical approach to distribution. The categories include national chains, super-regional chains, regional chains, two-state chains, one-state chains and specialty chains. The players include:

> TODAY THE COUNT OF COMPANIES THAT OPERATE AS CHAINS HAS REACHED AT LEAST 155...(THEY) DO $13 BILLION-PLUS IN SALES.

The national chains. Biggest among the chains that reach from coast to coast with their networks, if measured by number of branches, is W.W. Grainger, Inc., Skokie, Ill., a distributor of motors and other electrical products with 331 houses. It is the only one to have houses in every state. It is closely followed by Consolidated Electrical Distributors, Inc.(CED), Westlake Village, Calif., with 300 houses. WESCO, with 225 locations, has the next largest network among the six national chains. Graybar, with 197 houses, comes next, followed by Anixter Bros., Inc., Skokie, Ill., a wire and cable distributor, with 146. GE Supply, with 130 houses, rounds out the list.

These six companies employ close to 20,000 people among them. Together they have 1,329 houses and generally compete in all or most of the 50 states, although some have houses in as few as 40 states.

The six companies do about $6.1 billion in sales, about 15% of the electrical wholesaling industry's sales.

Looking only at the "traditional" full-line electrical distributor national chains, the figures come out this way: Graybar, CED, WESCO and GE Supply have 852 houses and a combined sales volume of $4.4 billion, or about 11% of industry sales. This percentage share of the market held by the national chains has remained constant over the last five years. Together these companies employ approximately 13,800 people.

The super-regional chains. These networks spill over regional boundaries, extending into broad and sometimes far-flung areas. All-Phase Electric Supply Co., Benton Harbor, Mich., the largest of the super-regional chains in both branches and employees, exemplifies the super-regional approach. It has 102 locations in 19 states. Its houses concentrate down the center of the country from its Michigan origins south to the states on the Gulf Coast (including Texas) and into Florida and South Carolina, encompassing 12 states. It also has branches in the West in Washington, California and Colorado, as well as in the East in Rhode Island, Massachusetts, Virginia and Pennsylvania.

Noland Co., Newport News, Va., concentrates mainly in the Southeast, but also stretches into Texas, Maryland and West Virginia. With 95 houses, some part plumbing, heating, refrigerating and industrial supplies, it covers 13 states.

The Summers Group, Dallas, Tex., combines Summers Electric Co., which has branches in Texas and surrounding states as well as in the Southeast, with Glasco Electric Co. in Missouri, Illinois and Colorado and ESD Co. in California and Arizona. It has 83 houses in 11 states. This approach to chain formation—the combination of several formerly independent electrical wholesalers under one corporate umbrella—is one followed by several of the super-regional chains. EESCO, Inc., Chicago, Ill., and Consolidated Electric Supply (CES), Miami, Fla., have also formed larger networks by combining the operations of several companies that more or less retain their individual names in the marketplace. EESCO has 34 houses in nine states in the Midwest and South. CES concentrates in Florida, with other houses in Ohio, California and the Washington, D.C.-Maryland-Delaware area.

Crescent Electric Supply Co., East Dubuque, Ill., with 82 houses in 13 states, spreads its branches through the farm country of the upper Midwest, from Illinois and Michigan west to Montana and Colorado. It now has a presence in Arizona also.

Together these companies have 6,020 people and 452 houses. They do close to $1.75 billion in sales, approximately 4% of industry sales.

The regional chains. By ELECTRICAL WHOLESALING's rather arbitrary definition, a regional chain has five or more branches in three or more states. More often than not, these companies serve broad but definable geographic areas. However, in recent years chains have taken to jumping over nearby states to place a branch in a target market. At present, the number of regional chains operating in the industry appears to be 42, not counting chains within chains, such as the companies within the Summers Group.

With almost 9,200 employees and 538 houses among them, these distributors do about $2.6 billion in sales, close to 6.5% of the nation's business in electrical apparatus and supplies.

These companies can be found in just about every area of the country, but more of them seem to operate in the Southeast and on the Pacific coast than elsewhere.

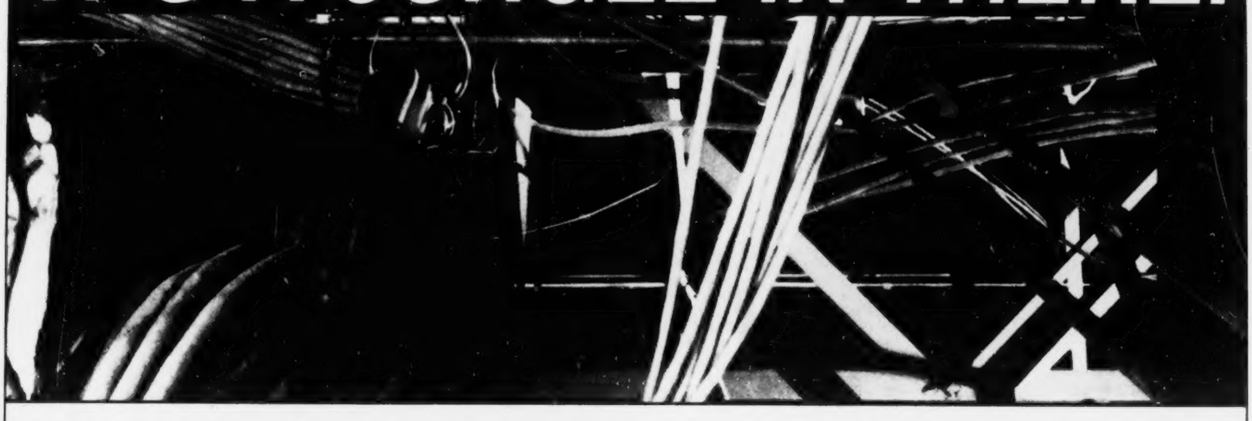
The two-state chains. These distributors operate five or more branches in just two states. Twenty-nine of them appear to be in business. Combined, they have 5,140 employees and 290 houses. Their sales volume probably amounts to $1.4 billion, or about 3.5% of industry sales. These chains operate in practically every state in the country, generally in two adjoining states. The largest among them is Hughes Supply, Inc., Orlando, Fla., which has 40 electrical houses in Florida and Georgia.

The one-state chains. These companies range in size from five houses to the largest among them, Dealers Electrical Supply Co., Waco, Tex., with 31 houses. But they all have one thing in common—they operate within one state's boundaries. We find 53 such chains in business today. They can be found in 25 states, but seem to be most common in California, Florida and Michigan. These 53 chains employ approximately 6,540 people and have 435 houses. Their sales volume probably approaches $1.8 billion, 4% or so of industry sales.

The specialty chains. The 16 chains (eighteen, if one counts Anixter Bros. and Grainger in this category) grouped under this heading tend to concentrate on the distribution of a type of product or related products; often they focus on specific customer markets as well. They tend to have multiple houses in multiple states, but usually only one per state, a different approach to distribution than most full-line chains take. The 16 companies probably employ close to 1,500 people and have 119 houses.

While this report has centered on the chains operating in the electrical wholesaling industry, it also puts a spotlight on the rest of the industry as well—the many firms that do business with one to four locations. While the chains have experienced considerable growth in their ranks and in their coverage, the rest of the industry has grown right in step with them. The chains may be more visible, and therefore generate more attention, but their share of the market remains much the same as it was 20 years ago. The smaller companies still do the bulk of the business in the electrical wholesaling industry. ☐

IT'S A JUNGLE IN THERE.



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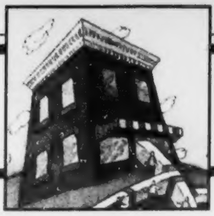

DISTRIBUTOR CHAINS

The national chains

COMPANY	HEADQUARTERS	LOCATIONS	STATES	EMPLOYEES	SALES*
W.W. Grainger, Inc.	Skokie, IL	331	50 In all states	2,200 e	NA
Westinghouse Electric Supply Co.	Pittsburgh, PA	225	49 In all states except: Nevada	3,000 e	NA
Graybar Electric Co., Inc.	St. Louis, MO	197	49 In all states except: Wyoming	4,764	$1,899.0
General Electric Supply Co.	Bridgeport, CT	130	42 In all states except: Delaware, Iowa, Mississippi, Nevada, North Dakota, Oregon, Rhode Island and South Dakota	2,300	NA
Consolidated Electrical Distributors, Inc.	Westlake Village, CA	300	40 In all states except: Alaska, Delaware, Massachusetts, Michigan, Minnesota, North Dakota, Pennsylvania, Rhode Island, South Dakota, Wyoming and West Virginia	3,700 e	NA
Anixter Bros., Inc.	Skokie, IL	146	40 In all states except: Alaska, Delaware, Hawaii, Idaho, Mississippi, Montana, North Dakota, Rhode Island, South Dakota, Vermont and Wyoming	4,000	1,250.0

The super-regional chains

COMPANY	HEADQUARTERS	LOCATIONS	STATES	EMPLOYEES	SALES*
All-Phase Electric Supply Co.	Benton Harbor, MI	102	19 Michigan, Alabama, California, Colorado, Florida, Georgia, Indiana, Kentucky, Louisiana, Massachusetts, Mississippi, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Virginia, Washington	1,800	$450.0
Noland Co.	Newport News, VA	95	13 Virginia, Alabama, Arkansas, Florida, Georgia, Kentucky, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Texas, West Virginia	264 e	62.9
Crescent Electric Supply Co., Inc.	East Dubuque, IL	82	13 Illinois, Arizona, Colorado, Indiana, Iowa, Michigan, Minnesota, Missouri, Montana, Nebraska, South Dakota, Wisconsin, Wyoming	900 e	NA
Summers Group	Dallas, TX	83	11 Texas, Arkansas, Arizona, California, Colorado, Georgia, Illinois, Louisiana, Missouri, New Mexico, Oklahoma	1,084	375.0
EESCO, Inc.	Chicago, IL	34	9 Illinois, Florida, Georgia, Indiana, Michigan, Minnesota, North Dakota, South Carolina, Wisconsin	810	260.0
Consolidated Electric Supply, Inc.	Miami, FL	56	7 Florida, California, Delaware, District of Columbia, Georgia, Maryland, Ohio	1,165	355.0

The regional chains

COMPANY	HEADQUARTERS	LOCATIONS	STATES	EMPLOYEES	SALES*
Stuart C. Irby Co.	Jackson, MS	19	9 Mississippi, Alabama, Arkansas, Florida, Kentucky, Louisiana, Oklahoma, Tennessee, Texas	490	$160.0
Southern Electric Supply Co., Inc.	Meridian, MS	32	6 Mississippi, Alabama, Florida, Louisiana, Oklahoma, Tennessee	425	100.0
Tvesco, Inc.	Memphis, TN	11	6 Tennessee, Arkansas, Georgia, Mississippi, North Carolina, Oklahoma	190	80.0
Platt Electric Supply, Inc.	Beaverton, OR	57	5 Oregon, California, Idaho, Nevada, Washington	670	133.0

COMPANY	HEADQUARTERS	LOCATIONS	STATES	EMPLOYEES	SALES*
Cameron and Barkley Co., Electrical Div.	Charleston, SC	30	5 South Carolina, Georgia, Kentucky, North Carolina, Tennessee	494	$161.0
American Electric Co.	St. Joseph, MO	15	5 Missouri, Colorado, Kansas, Nebraska, Oklahoma	179	NA
McJunkin Corp.	Charleston, WV	10	5 West Virginia, Illinois, Kentucky, Ohio, Pennsylvania	110	NA
Mayer Electric Supply Co., Inc.	Birmingham, AL	32	4 Alabama, Florida, Georgia, Tennessee	580	157.7
Tristate Electrical Supply Co., Inc.	Hagerstown, MD	22	4 Maryland, Pennsylvania, Virginia, West Virginia	288	98.4
Maddux Supply Co.	Greensboro, NC	10	4 North Carolina, Florida, South Carolina, Virginia	250e	NA
Kriz-Davis Co.	Grand Island, NE	10	4 Nebraska, Kansas, Missouri, Oklahoma	160	52.0
Debenham Electric Supply Co., Inc.	Anchorage, AK	10	4 Alaska, Nevada, Utah, Washington	135	39.0
Cardello Electric Supply Co.	Pittsburgh, PA	10	4 Pennsylvania, Florida, Ohio, West Virginia	118	24.0
Electrical Equipment Co.	Raleigh, NC	9	4 North Carolina, Georgia, South Carolina, Virginia	181	43.1
Border States Electric Supply Co.	Fargo, ND	9	4 North Dakota, Minnesota, Montana, South Dakota	210	NA
United Electric Supply Co., Inc.	New Castle, DE	7	4 Delaware, Maryland, New Jersey, Pennsylvania	180	NA
Heintz Electric Co.	Quincy, IL	5	4 Illinois, Iowa, Kansas, Missouri	60	NA
Branch Electric Co.	Forestville, MD	18	3 Maryland, Virginia, West Virginia	375	100.0
Kirby Risk Supply Co., Inc.	Lafayette, IN	17	3 Indiana, Illinois, Ohio	312	NA
Ralph Pill Electric Supply Co.	Boston, MA	15	3 Massachusetts, Maine, New Hampshire	172	NA
Wholesale Supply Group, Inc.	Cleveland, TN	15	3 Tennessee, Alabama, Georgia	60e	9.2
State Electric Supply Co., Inc.	Huntington, WV	13	3 West Virginia, Kentucky, Ohio	349	NA
Interstate Electric Supply Co., Inc.	Chantilly, VA	13	3 Virginia, District of Columbia, Maryland	221	51.5
ESSCO Wholesale Electric	Anaheim, CA	12	3 California, Arizona, Nevada	94	NA
Bryant Supply Co., Inc.	Gastonia, NC	12	3 North Carolina, Georgia, South Carolina	275	66.9
Stusser Electric Co.	Seattle, WA	12	3 Washington, Alaska, Oregon	235	62.0
Eck Supply Co.	Richmond, VA	12	3 Virginia, District of Columbia, South Carolina	205	47.5
Elliott Electric Supply, Inc.	Nacogdoches, TX	11	3 Texas, Louisiana, Oklahoma	125	21.4
Lappin Electric Co.	Milwaukee, WI	10	3 Wisconsin, Minnesota, Illinois	185	47.3
Massachusetts Gas & Electric Light Supply Co.	Boston, MA	8	3 Massachusetts, New Hampshire, Rhode Island	235	NA
Kulwin Electric Supply Co., Inc.	Indianapolis, IN	7	3 Indiana, Florida, Kentucky	103	32.0
Brown Wholesale Electric Co.	Sun Valley, CA	7	3 California, Arizona, Hawaii	220	85.0
Richards Electric Supply Co., Inc.	Cincinnati, OH	7	3 Ohio, Indiana, Kentucky	180	52.5
Raub Supply Co.	Lancaster, PA	7	3 Pennsylvania, New York, Virginia	50	NA
Electric Specialty & Supply Corp.	Boston, MA	6	3 Massachusetts, Connecticut, New Hampshire	114	37.9
J.H. Larson Electrical Co.	Golden Valley, MN	6	3 Minnesota, South Dakota, Wisconsin	121	31.0
Mack Electric Supply Co., Inc.	Dothan, AL	6	3 Alabama, Florida, Georgia	190	58.5
Warren Electric Co.	Houston, TX	6	3 Texas, Louisiana, Puerto Rico	250	87.9
McNaughton-McKay Electric Co.	Madison Heights, MI	5	3 Michigan, North Carolina, South Carolina	190	150.0
Tecot Electric Supply Co., Inc.	Wilmington, DE	5	3 Delaware, Maryland, Pennsylvania	130	29.0
Crum Electric Supply Co., Inc.	Casper, WY	5	3 Wyoming, Colorado, South Dakota	54	NA
Schindler Electric Supply Co.	Couer d'Alene, ID	5	3 Idaho, Oregon, Washington	32	NA

■ The two-state chains

COMPANY	HEADQUARTERS	LOCATIONS	STATES	EMPLOYEES	SALES*
Hughes Supply, Inc.	Orlando, FL	40	Florida, Georgia	900	$185.0
Ace Electric Supply Co.	Jacksonville, FL	23	Florida, Georgia	265	NA
North Coast Electric Co.	Bellevue, WA	23	Washington, Oregon	400	NA
Norcal Electric Supply, Inc.	Redding, CA	13	California, Nevada	150	NA
Nunn Electric Supply Corp.	Amarillo, TX	12	Texas, New Mexico	152	33.5
Butler Supply, Inc.	St. Louis, MO	12	Missouri, Illinois	108	20.0

COMPANY	HEADQUARTERS	LOCATIONS	STATES	EMPLOYEES	SALES*
The Hite Co.	Altoona, PA	11	Pennsylvania, New York	142	$30.4
Cummins Supply Co.	Ft. Worth, TX	10	Texas, Colorado	184	60.3
Viking Electric Supply, Inc.	St. Paul, MN	9	Minnesota, Wisconsin	180	NA
Philips & Co.	Columbia, MO	9	Missouri, Illinois	102	NA
Denney Electric Supply	Ambler, PA	8	Pennsylvania, Delaware	92	23.2
Stoneway Electric Supply	Seattle, WA	8	Washington, Idaho	123	33.0
Braid Electric Co.	Nashville, TN	8	Tennessee, Kentucky	140	NA
Western Extralite Co.	Kansas City, MO	8	Missouri, Kansas	NA	NA
United Electric Supply Co.	St. Louis, MO	6	Missouri, Illinois	120	NA
Plainsco, Inc.	Aberdeen, SD	6	South Dakota, North Dakota	125e	NA
Pacific Electrical Supply, Inc.	San Leandro, CA	6	California, Nevada	130	NA
Northland Electric Supply Co.	Minneapolis, MN	6	Minnesota, Wisconsin	144	49.1
Electrical Wholesale Supply Co., Inc.	Idaho Fall, ID	6	Idaho, Wyoming	45e	NA
Gerome Electric Supply Co.	Uniontown, PA	6	Pennsylvania, West Virginia	30e	NA
Rockingham Electrical Supply Co., Inc.	Newington, NH	5	New Hampshire, Maine	88	NA
Mosebach Electric & Supply Co.	Pittsburgh, PA	5	Pennsylvania, West Virginia	86	NA
Matthews Electric Supply Co., Inc.	Birmingham, AL	5	Alabama, Tennessee	99	NA
Moore Electric Supply Inc.	Charlotte, NC	5	North Carolina, South Carolina	135	51.8
Penn Electric Supply Group	Philadelphia, PA	5	Pennsylvania, New Jersey	200	51.0
Billows Electric Supply Co.	Philadelphia, PA	5	Pennsylvania, New Jersey	270	60.0
Eoff Electric Co.	Salem, OR	5	Oregon, Washington	180	55.0
City Hall Electrical Supply, Inc.	Providence, RI	5	Rhode Island, Massachusetts	100	22.0
Kendall Electric, Inc.	Battle Creek, MI	5	Michigan, Indiana	115	NA
Ryall Electric Supply Co.	Denver, CO	5	Colorado, Wyoming	138	NA
Industrial Electric Service Co.	Arcata, CA	5	California, Oregon	70	11.0
Holmes Distributors, Inc.	Portland, ME	5	Maine, New Hampshire	82	NA

■ The one-state chains

COMPANY	HEADQUARTERS	LOCATIONS	STATE	EMPLOYEES	SALES*
Dealers Electrical Supply Co.	Waco, TX	31	Texas	433	NA
City Electric Supply Co.	Mt. Dora, FL	22	Florida	120	$11.5
Raybro Electric Supplies, Inc.	Tampa, FL	20	Florida	414	107.9
Watson Electric Supply Co.	Dallas, TX	17	Texas	245	NA
Stanion Wholesale Electric Co.	Pratt, KS	16	Kansas	182	NA
Electric Supply Co. of Asheville, Inc.	Asheville, NC	12	North Carolina	125	NA
Keathley-Patterson Electric Co.	N. Little Rock, AR	12	Arkansas	120	30.0
Commerce Electric Supply Co.	Linthicum, MD	11	Maryland	111	NA
Electric Supply Co., Inc.	Raleigh, NC	10	North Carolina	185	NA
Madison Electric Co.	Detroit, MI	10	Michigan	198	NA
Controlco	Bakersfield, CA	10	California	NA	NA
Walters Wholesale Electric Co.	Long Beach, CA	9	California	200	57.0
Dardanella Electric Corp.	Arcadia, CA	9	California	120	50.2
Teche Electric Supply, Inc.	Lafayette, LA	9	Louisiana	70	NA
Standard Electric Co.	Bangor, ME	9	Maine	140	NA
Hunt Electric Supply Co.	Burlington, NC	9	North Carolina	75	16.0
Seattle Lighting & Fixture Co.	Seattle, WA	8	Washington	175e	NA
St. Louis-Metro Electric Supply, Inc.	St. Louis, MO	8	Missouri	57e	NA
Franklin Electric Co.	Atlantic City, NJ	8	New Jersey	85	21.0
Medler Electric Co.	Alma, MI	8	Michigan	94	NA
Standard Electric Co.	Saginaw, MI	8	Michigan	88	NA
City Electric Supply of California	Novato, CA	7	California	210	64.5
Peebles Supply Corp.	Newport News, VA	7	Virginia	55	NA
Electric Supply of Salinas	Salinas, CA	7	California	75	15.0
Electric Supply, Inc.	High Point, NC	7	North Carolina	84	20.0
Hein Electric Supply Co.	Milwaukee, WI	7	Wisconsin	40	NA
Roden Electrical Supply Co.	Knoxville, TN	6	Tennessee	75	NA
Springfield Electric Supply Co.	Springfield, IL	6	Illinois	145	42.8
Scott Electric Co.	Greensburg, PA	6	Pennsylvania	431	NA
Fitzpatrick Electric Supply Co., Inc.	Muskegon, MI	6	Michigan	145	NA
Basic Distribution Corp.	Columbus, OH	6	Ohio	84	NA
Electrical Wholesalers	Hartford, CT	6	Connecticut	140	NA
Independent Electric Supply, Inc.	San Carlos, CA	6	California	170e	NA
Friedman Electric Group, Inc.	Exeter, PA	6	Pennsylvania	125	NA
Lupia Electric Supply, Inc.	Ogdensburg, NY	6	New York	30e	NA
Brown's Electrical Supply Co., Inc.	Anchorage, AK	5	Alaska	38	NA

COMPANY	HEADQUARTERS	LOCATIONS	STATE	EMPLOYEES	SALES*
Electrical Distributors Inc.	Charlotte, NC	5	North Carolina	53	12.0
Brock-McVey Supply Co.	Lexington, KY	5	Kentucky	66	NA
Shepherd Electric Supply Co., Inc.	Goldsboro, NC	5	North Carolina	80	$18.0
The Furbay Electric Supply Co.	Canton, OH	5	Ohio	73	NA
K & M Electric Supply, Inc.	Riviera Beach, FL	5	Florida	79	NA
Michigan Chandelier Co.	Southfield, MI	5	Michigan	64 e	14.2
Coleman Electrical Supply Co., Inc.	Brooklyn, NY	5	New York	75	NA
Fischer-Flack, Inc.	Saginaw, MI	5	Michigan	93	NA
Minnesota Electric Supply Co.	Willmar, MN	5	Minnesota	65	NA
Hunzicker Brothers, Inc.	Oklahoma City, OK	5	Oklahoma	93	NA
Evergreen Oak Electric Supply & Sales Co., Inc.	Crestwood, IL	5	Illinois	185	32.0
McDonald Distributors of Florida, Inc.	Ft. Lauderdale, FL	5	Florida	90	24.4
Coast Electric Co.	San Diego, CA	5	California	103	35.0
Bergenfield Lighting & Electrical Supplies	Bergenfield, NJ	5	New Jersey	230	51.0
Colotex Electric Supply Co.	Loveland, CO	5	Colorado	38	NA
Diamond Electric Supply	Caro, MI	5	Michigan	28 e	NA
All City Electric Supply	Artesia, CA	5	California	40 e	NA

The specialty chains

COMPANY	HEADQUARTERS	LOCATIONS	STATES		EMPLOYEES	SALES*
Champion, Inc.	Iron Mountain, MI	5	4	Michigan, Minnesota, Ohio, Wisconsin	NA	NA
Electrical Insulation Suppliers, Pacific Div.	San Jose, CA	12	7	California, Arizona, Colorado, Oregon, Texas, Utah, Washington	82	NA
GNWC Wire	Downers Grove, Ill.	12	11	Illinois, Alabama, Arizona, California, Colorado, Florida, Massachusetts, New Jersey, North Carolina, Ohio, Texas	40	$7.0
Grote Lighting & Supply Co., Inc.	Indianapolis, IN	8	7	Indiana, Arizona, Florida, Kentucky, Michigan, Ohio, Pennsylvania	64	NA
Houston Wire & Cable Co.	Houston, TX	12	9	Texas, California, Florida, Illinois, Louisiana, New Hampshire, North Carolina, Pennsylvania, Washington	300	NA
I/O Corp.	Conshohocken, PA			Pennsylvania, Florida, New York, North Carolina, Ohio		
King Wire & Cable Corp.	Jamaica, NY	5	5	New York, Arizona, Florida, Ohio, Texas	150	50.0
Lakeland Engineering Equipment Co.	Minneapolis, MN	9	7	Minnesota, Colorado, Illinois, Iowa, Kansas, Nebraska, Texas	30 e	NA
Manhattan Electric Cable Corp.	Rye, NY	13	11	New York, California, Georgia, Illinois, Indiana, Massachusetts, Minnesota, New Jersey, Ohio, Texas, Washington	NA	NA
Memphis Lamp Co.	Memphis, TN	6	4	Tennessee, Florida, Louisiana, Texas	60	NA
Montroy Supply Co.	Commerce, CA	6	4	California, Arizona, Nevada, Utah	15 e	NA
NEIW, Inc.	Berlin, CT	6	6	Connecticut, California, Florida, Missouri, New York, Texas	NA	NA
Northern Wire and Cable, Inc.	Troy, MI	6	5	Michigan, Florida, Georgia, Nevada, Ohio	220	41.5
Power/Mation Div.	St. Paul, MN	6	5	Minnesota, Illinois, North Dakota, Oklahoma, Wisconsin	98	NA
Temple, Inc.	Dallas, TX	7	6	Texas, Colorado, Kansas, Missouri, New Mexico, Oklahoma	65	45.0
Voss Electric Supply Co.	Lincoln, NE	6	6	Nebraska, Illinois, Minnesota, Missouri, Oklahoma, Texas	60	10.0

Notes: The District of Columbia and Puerto Rico are included under the "States" heading.

* "Sales" are 1989 sales given in $ millions. Figures for "Sales" and "Employees" are for electrical wholesale operations only.

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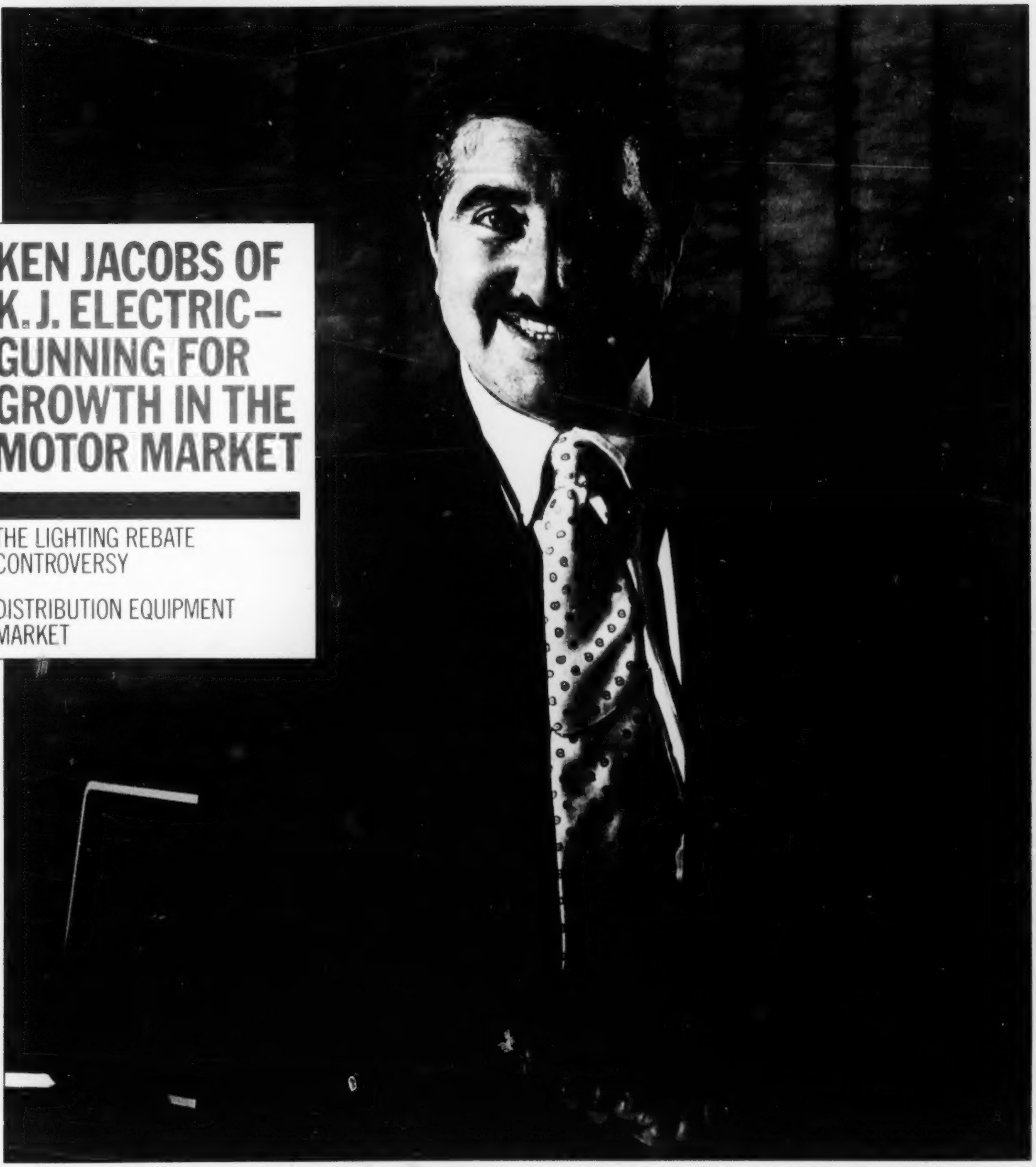

KEN JACOBS OF K.J. ELECTRIC— GUNNING FOR GROWTH IN THE MOTOR MARKET

THE LIGHTING REBATE CONTROVERSY

DISTRIBUTION EQUIPMENT MARKET

VOLUME 71
NUMBER 8

ELECTRICAL WHOLESALING

AUGUST
1990

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COVER STORY

27 MOTOR DRIVE

Ken Jacobs took a struggling motor repair shop and molded it into a $10 million-plus company with a new direction.

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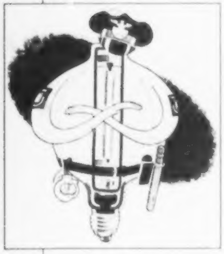

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ELECTRICAL WHOLESALING

THE PUBLISHER'S NOTE

EW's Dean Holstein

Helping you deal with changing market and economic conditions is an important part of the service we provide. This month's issue spotlights readers who show what an electrical distributor can do to turn adversity to advantage.

Milton S. Colby and Jim Rodale, managers of Surrey Electric Supply Corp. in Union, N.J., faced a tough market situation early this year—construction activity was down, contractor business off. Their response was to pump resources into remodeling and expanding a small retail home center the company started five years ago to capture consumer business.

Colby and Rodale are applying retail merchandising techniques, keeping the doors open on evenings and weekends and even taking credit cards from consumers. Their story, reported by EW associate editor Dean Holstein, begins on page 38.

Rich Hathaway

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DISTRIBUTION EQUIPMENT

IN THE DISTRIBUTION EQUIPMENT MARKET, MANUFACTURERS EXPECT DISTRIBUTORS TO ACT AS A TRUE EXTENSION OF THEIR SALES FORCES.

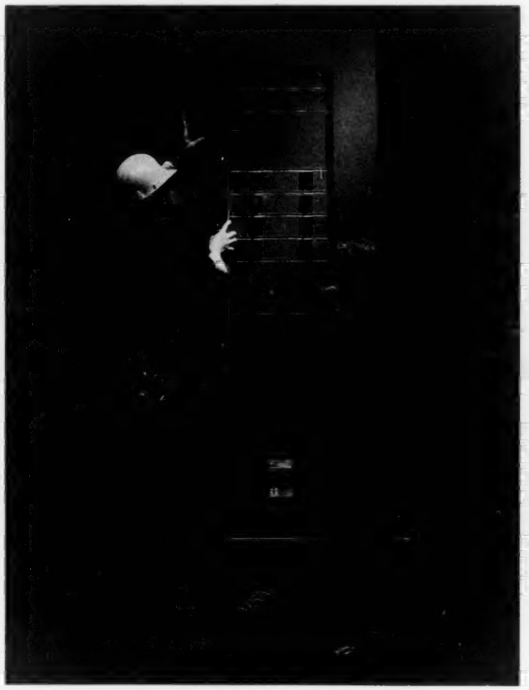
By Jim Lucy, Executive Editor

■ For most electrical distributors, carrying a complete line of distribution equipment isn't an option—it's a must. Whether a distributor concentrates on the construction market or on industrial business, distribution equipment will be high on most customers' shopping lists.

Distribution equipment, which includes load centers, metering equipment, panelboards, switchgear, safety switches, circuit protection equipment, dry-type transformers, busway and motor control centers, is the nuts and bolts of every electrical system. These products also power a significant portion of the average electrical distributor's sales. According to ELECTRICAL WHOLESALING's 1989 Market Planning Guide, distribution equipment accounts for roughly 18% of electrical wholesalers' business. As a product group, only lighting equipment, at 22.5%, generates more of distributors' sales.

The distribution equipment business is an established market, with players that have been in the electrical industry for years. Niche suppliers do not seem to have the same impact in this market as they do in others, such as lamps or wire and cable.

Depending on one's definition of the market's boundaries, the major players that offer a distribution equipment package include: Challenger Electrical Equipment Corp., Malvern, Pa.; Crouse Hinds Distribution Equipment Products, Charlottesville, Va.; Cutler-Hammer Products, Milwaukee, Wis.; GE Co., Plainville, Conn.; Siemens Energy & Automation, Inc., Alpharetta, Ga.; Square D Co., Palatine, Ill.; and Westinghouse Electric Corp., Pittsburgh, Pa. Other companies manufacture circuit breakers and fuses, which as overcurrent protection equipment are considered part of this market, but they don't offer a full line of distribution equipment, a notable characteristic of the market's heavy hitters.



Distribution equipment accounts for almost 20% of electrical wholesalers' business.

Distribution equipment manufacturers have seen their share of mergers and acquisitions, but the wave of consolidation washing over other industries, such as wire and cable and lighting fixtures, hasn't hit this market quite as hard. Eaton Corp.'s 1978 purchase of Cutler-Hammer Products, Cooper Industries' purchase of Crouse-Hinds in 1981, Siemens' acquisition of the I-T-E product line in 1983 and Westinghouse's acquisition of Challenger Electrical Equipment Corp. in 1987 are some of the market's major milestones. Westinghouse and Challenger have an unusual relationship in the distribution equipment industry. While the companies' product offerings overlap in some areas, particularly in the commercial and industrial markets, each continues to market products under its own name.

Dominant among the trends molding the distribution equipment market:

Manufacturers and distributors are choosing up sides. Distribution equipment manufacturers want to pare down the size of their distributor networks, while distributors are looking to decrease the number of vendors they represent. It's a familiar scenario in the electrical industry, and many manufacturers offer well-publicized incentive programs that encourage distributors to single-source and carry only that supplier's line in a particular product group.

Because of the broad scope of distribution equipment—it accounts for almost one-fifth of the average distributor's total business—wholesalers who choose up sides in this market may find that the impact on their companies is dramatic. Suppliers want distributors to carry not only load centers and metering equipment, but safety switches, circuit breakers and panelboards as well. But the cost of stocking large distribution equipment such as panelboards and switchgear, which are not on-the-shelf products, magnifies the inventory investment.

Teaming up with one distribution equipment manufacturer makes sense for electrical distributors because it gives them more clout with the supplier and eliminates the duplicate inventory and additional product training that multiple lines require, says Bill Elliott, president of Elliott Electric Supply Co., Nacogdoches, Tex. "The more you stock, the more familiar you should become with one line. Panelboards for industrial applications turn relatively slowly, and they are a big inventory commitment. Distributors can't afford to stock two lines of them," he says.

Product developments are upping distributors' inventory investment—and sales opportunities. The trend among manufacturers to develop commercial and industrial panelboards that distributors can carry in stock also increases their inventory investment. In the past, equipment for these markets often was custom-designed for a job, so distributors rarely stocked it. "Anything outside of load centers was built by manufacturers at regional assembly plants," explains Elliott. "Distributors would place an order with the manufacturer and the manufacturer would custom assemble everything and ship it to the job site. More manufacturers are into stockable panelboards. We stock through 1,200A."

While the basic products distributors stock for the residential market haven't changed all that much over the years, Square D has just introduced a one-of-a kind residential load center. Called the "Trilliant Home Power System," the box is made of a new-generation polymer, as opposed to the standard metal used in most older models. Other features include interchangeable components and a design that reduces installation time. "It's the most significant new product for the residential market that Square D has released in 35 years," says Ron Rogers, manager of commercial marketing operations for Square D's Distribution Equipment Business in Lexington, Ky.

Distributors are being urged to get involved with bigger distribution equipment. As distributors' market interests evolve, so too does the type of distribution equipment they carry. Because distribution equipment is an integral part of all residential, commercial and industrial electrical systems, distributors who change their market focus also must change the type of distribution equipment they sell. Historically, many distributors have started their businesses by servicing the residential market, which requires load centers, metering equipment and some panelboards.

THE EQUIPMENT

A market basket

Full-line electrical distributors handle most types of distribution equipment, according to the 1988-89 *Directory of Electrical Wholesale Distributors*. What follows are the percentages of distributors who carry certain types of products:

Product	Percent of distributors that carry it
Fuses	86%
Circuit breakers	85%
Safety switches	82%
Switchboards and panelboards	74%
Power transformers	66%
Switchgear	64%
Residential load centers	56%
Busway	47%

After establishing a base in the residential market, many construction-oriented distributors shift their focus to larger commercial projects. These jobs require different types of distribution equipment, such as larger panelboards, switchgear, bus ducts and bus plugs.

While many distributors maintain this construction orientation, others diversify into the industrial end of the business, often to balance out the cyclical swings in the residential and commercial construction markets. In addition to many of the products distributors stock for large commercial projects, the industrial market requires larger panelboards, motor control centers and switchgear that carry up to 15kV. In comparison, the bulk of commercial applications operate at 600V or less.

Marketing the larger panelboards and switchgear requires a different type of sell. Fewer jobs go out to open bid in the industrial market, and distributors must learn to identify the buying influences, which may vary by customer and by application. On the familiar turf of the construction market, the buying influences are fewer and easier for distributors to decipher. At industrials, however, distributors must get to know not only the plant maintenance and purchasing personnel, but the engineering department as well.

For distributors to succeed in the industrial market, they must be able to offer customers a complete product line. They have to create demand for products by spotting potential applications on the plant floor and showing how a product's or system's technical specifications match the application. And in today's just-in-time delivery environment, distributors must be able to offer industrial customers quick access to products.

Once a distributor has gained a customer's confidence in industrial distribution equipment, he may be able to sell the customer control and automation products as well. The buying influences and sales approach can be the same for both markets, says Bob Pignataro, vice president of distributor marketing for Siemens Energy & Automation. Both types of products require "solution selling," whereby distributors prescribe a product or system solution to remedy a customer's application problem. Some distributors that have been able to balance both the industrial and automation markets include McNaughton-McKay Electric Co., Madison Heights, Mich.; Industrial Electric Supply Co., Birmingham, Ala.; and Elliott Electric Supply Co.

The distribution products are only a stepping stone into the automation market, of course. Once there, distributors will find that the high-tech field differs dramatically from the distribution equipment market. "You don't get as much pull-through as you might expect. A distributor has to run a high-tech business almost as a stand-alone operation, a separate division," says Elliott. "It's different enough that most people who have been successful in it use an entirely different sales force and run it as a separate profit center."

Distributors must have superior product knowledge and sales skills. Selling distribution equipment—particularly to industrials—differs today from ten years ago because manufacturers now expect distributors to understand the products they sell thoroughly. In fact, distributors must know the product as well as the manufacturer does and have the sales and marketing skills necessary to find and service applications. It's the most effective way for one distributor to differentiate itself from the competition, says Pignataro of Siemens Energy & Automation.

"Manufacturers basically treat these distributors as an extension of their sales organization," he says. "It's no longer a distributor getting a lead and then filtering it back to the manufacturer. If the distributor follows through and becomes the expert to the industrial user, then that will differentiate him in the marketplace."

To sell at this level and become a true partner to the supplier, the distributor's sales force must be highly trained. "In the old days, distributors could represent eight different lines because they were not called on to know anything about the product. Training wasn't a factor," says Wayne Murphy, manager of distribution for Westinghouse Electric's Distribution and Control business unit located in Pittsburgh.

Today, training is a major emphasis for all distribution equipment manufacturers. Five years ago, for example, 500 distributor personnel attended Westinghouse's training school on distribution equipment and controls; this year Murphy says the company will train over 2,200 people.

To teach distributors about product capabilities, distribution equipment manufacturers also offer seminars, videotapes, training manuals and computerized application programs, such as Cutler-Hammer's Computerized Help in Product Selection (CHIPS) program. This software walks users step-by-step through the selection process by asking for the parameters of an application and then suggesting the proper product for that situation.

Distributors offer more value-added modification and repair services. The shifting of responsibilities in the distribution equipment market carries through after the sale. Distributors now do some of the service and replacement work of existing equipment that the manufacturers used to do themselves. Several manufacturers, including Westinghouse and GE, offer retrofit kits that distributors can use to update motor control centers, panelboards and circuit breakers. These kits add new communication capabilities or more advanced control to installed products.

The retrofit work "adds more value to the equation for distributors because they perform services that manufacturers previously performed," says Tom Gilbertson, manager of distribution management for GE's Electrical Distribution and Control Sales division in Plainville, Conn. GE is in the midst of a $500 million redesign of its distribution equipment product offering that will make the line more modular. One goal of the redesign is to make installation faster and simpler; another is to make retrofits easier.

Westinghouse also encourages the use of retrofit kits, and the company's distributors can learn to retrofit its line of load centers, circuit breakers, safety switches and motor controls at its Pittsburgh training facilities. Murphy says the retrofit work is part of a renewed emphasis on the MRO market. Distributors can give customers the option of buying a new motor control center or retrofitting an existing one to bring it up to date, he says. "In the past, manufacturers and distributors saw the MRO business as mundane—selling an extra circuit breaker for a panel, a spare load center or a new relay to replace an old one. It wasn't an aggressive selling thing."

"Smart" distribution equipment is coming on the market. Products are learning to talk to each other. Years ago, communications between electrical products only took place in process equipment on the factory floor. Today, some types of distribution equipment, such as load centers and circuit breakers, can communicate.

This communications ability can save time in troubleshooting when a production line is down, for example, because a plant engineer can monitor circuit breakers and panelboards from a central location instead of going to each panel on the plant floor. The "smart" distribution equipment's on-board diagnostic capability allows circuit breakers or other equipment in panelboards to send a message to a central location to alert plant personnel when a problem exists.

The market for "smart" distribution equipment appears to be growing; one manufacturer says it is doubling each year. Most sources remain skeptical about when this technology will surface in the residential market, however. A lot of questions remain about which wiring systems will be used in smart homes—those in which electrical and electronic household appliances interact via the home-wiring system (see EW—"Smart Homes," October 1988, p. 40).

All the trends boil down to one fact that may shape the distribution equipment market more than any other in the future: Manufacturers' dependence on distributors as an extension of their sales organizations is growing. Translation: For distributors to succeed in this market, it will no longer be enough for them merely to wait for orders to roll in. Sums up one manufacturer, "Ten years ago, people thought it was the manufacturer's responsibility to create demand, and the distributor's job to service it. That's no longer the case." ☐

Many distributors start out in the distribution equipment market by focusing on new residential construction.

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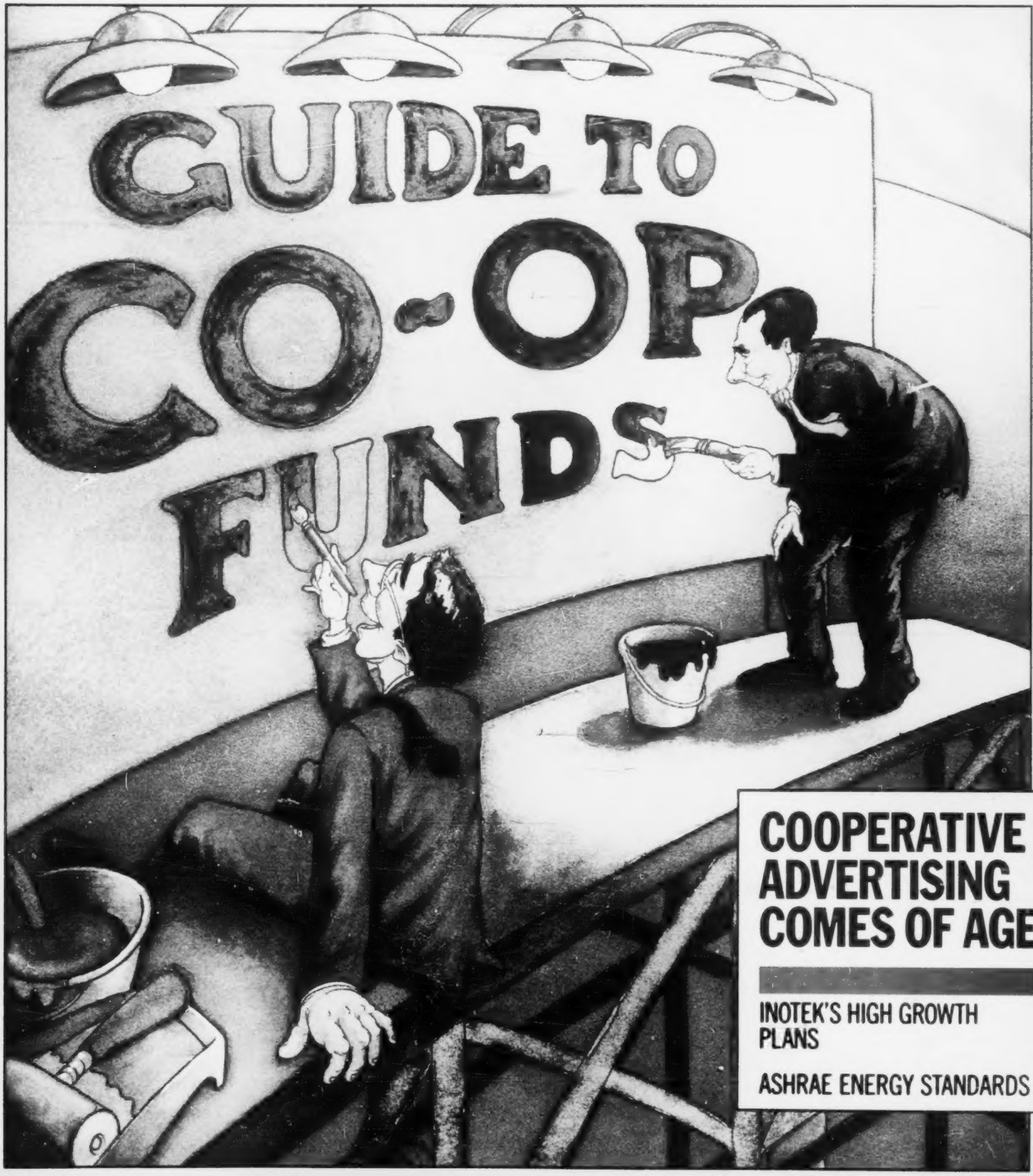
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FUNDS

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INOTEK'S HIGH GROWTH PLANS

ASHRAE ENERGY STANDARDS

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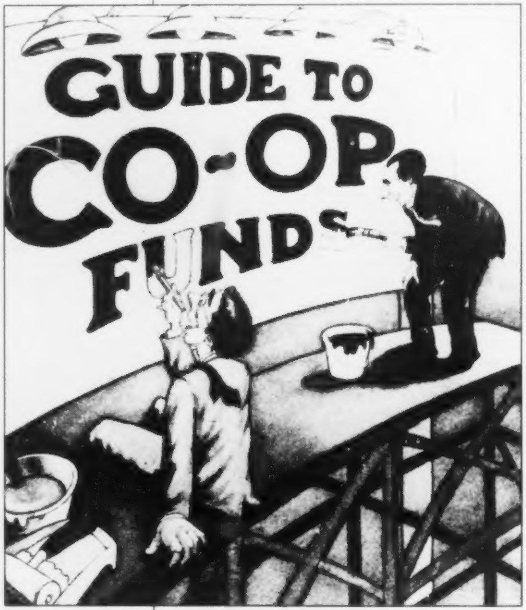

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Suppliers' cooperative advertising and promotional funds are helping electrical distributors stretch their marketing dollars.

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To fuel its dreams of growth, Wholesale Electric Supply Corp. takes an unusual approach to the market.

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Lighting for workplaces where computers are in use presents a growing sales opportunity.

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Handling a customer who is wrong requires a bit of finesse.

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ASHRAE's standards may spur the use of energy-efficient products in commercial construction.

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ELECTRICAL
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THE PUBLISHER'S NOTE

As part of our continuing coverage of the evolving market environment that confronts distributors, this month's cover story explores one of the hottest topics in the electrical industry—cooperative advertising.

Starting on page 37, EW associate editor Dean Holstein reports on how co-op marketing programs have changed since the days when they consisted mostly of manufacturer-provided ad slicks for promoting lighting showrooms. Co-op programs now include direct mail, in-store promotions, customer training seminars, house organs, counter days—even local radio and television advertising. Your competitors, such as home centers and mass-market retailers, have used these tools for years. Here's your chance to see how you can compete in that same area.

The chart beginning on page 41 lists the co-op programs and promotional materials available from over 100 manufacturers. This new ELECTRICAL WHOLESALING exclusive provides the electrical industry's first-ever published analysis of these important marketing tools. By analyzing what manufacturers offer in the way of co-op advertising, distributors can gain new insight on how to market themselves more professionally. So much has been said recently about the importance of manufacturers and distributors establishing "marketing partnerships" with each other. Taking advantage of these co-op programs is one way you and your suppliers can give real meaning to this phrase.

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ever approach is used, the standard's basic requirements apply to the same building system components: electric power, lighting and other system equipment, envelope, HVAC systems and equipment, service water heating and energy management.

A designer who wants to take the easiest route to showing compliance would use the standard's prescribed energy-saving criteria for each part of a system, says Jim Heldenbrand, manager of standards at ASHRAE. Someone who wants more flexibility could use the systems performance method, he says, which gives an overall energy requirement—or an amount of energy to be used—for an entire system (e.g., lighting).

The compliance method that offers the greatest flexibility, however, is energy-cost budgeting. With this method, the designer calculates the annual energy costs of a prototype building and compares them to the computed annual energy consumption costs of the new building he plans to design. If the latter is less than or equal to the former, then the designer has complied with the standard. This approach allows the designer to come up with innovative ways to save energy in one area and use more in another, says Heldenbrand.

For instance, a designer who wants to exceed the energy usage levels for lighting that are allowed for in the prescriptive method could take energy from somewhere else, such as the HVAC installations. One way to accomplish this would be to reduce the air conditioning load and use a more efficient type of building siding, according to one electrical engineer. He says the designer could avoid putting large windows on the south side of the building, for instance, which soaks in the most heat from the sun, or use timers that reduce the air conditioning load from full blast an hour before the building is to be occupied to increasingly lower levels as the day progresses.

Heldenbrand emphasizes that Standard 90.1's requirements are meant to be cost-effective over the life cycle of a building. While many developers are sure to frown upon the standard because it will increase the initial construction costs of a building, in the long run it will lower the operating costs through reduced energy usage, resulting in a relatively short payback period.

In spite of complaints by industry groups such as the International Association of Lighting Designers, which charged ASHRAE with neglecting input from lighting officials on certain requirements, what Standard 90.1 attempts to accomplish is said to outweigh any shortcomings. The bottom line, says Heldenbrand, is that the standard provides for more energy-efficient and economical building environments.

For this reason, Standard 90.1 is destined to serve as the future role model for building design and operation, regardless of whether or not it is adopted in its entirety or partially as state or federal codes over the next few years. Keeping this in mind, electrical distributors should take a close look at the value of such energy-saving standards. ☐

FINANCIAL DATA

PROFIT PICTURE

ELECTRICAL DISTRIBUTORS SHOW A SLIGHT NET PROFIT GAIN IN 1989.

■ Electrical distributors ended up 1989 with a lower gross profit than they enjoyed in 1988--19.85% last year versus 20.47% the year before. But the good news is that they were able to put more money in their pockets during the same time period. Distributors showed 2.96% net profit before taxes in 1989, compared to 2.86% in 1988.

This information comes from a report compiled each year by the Electrical Manufacturers Credit Bureau (EMCB), Palatine, Ill. The report is designed to establish a basis for comparing and measuring the financial status and operating statistics of electrical distributors.

More than 750 financial statements for fiscal years ending in 1989 and early 1990 were received by the EMCB from electrical wholesalers. The organization says that only complete financial statements from qualified electrical distributors were considered for the national financial norms contained in the report. ☐

ELECTRICAL WHOLESALERS' OPERATIONS IN 1989

CURRENT ASSETS:		CAPITAL RATIOS:		OPERATING ANALYSIS:	
CASH	5.68%	CURRENT RATIO	1.86 TO 1	GROSS PROFIT	19.85%
RECEIVABLES	48.98%	QUICK RATIO	.99 TO 1	NET PROFIT (BEFORE TAXES)	2.96%
INVENTORY	45.34%	WORTH DEBT RATIO	.79 TO 1		

*% IN RELATION TO CURRENT ASSETS	NATIONAL NORM		NET WORTH UNDER $150,000	$150,000 TO $300,000	$300,000 TO $500,000	$500,000 TO $1,000,000	OVER $1,000,000
	1989	1988					
CASH*	5.68	4.13	2.54	4.67	7.84	3.10	6.70
RECEIVABLES*	48.98	45.73	43.84	44.57	41.23	52.02	50.80
INVENTORY*	45.34	50.14	53.62	50.76	50.93	44.88	42.50
CURRENT RATIO	1.86	1.98	1.74	1.83	1.68	1.61	1.94
QUICK RATIO	.99	1.08	.80	.90	.82	.88	1.12
WORTH DEBT RATIO	.79	.73	.41	.46	.72	.75	.96
GROSS PROFIT	19.85	20.47	17.34	17.81	22.28	21.25	19.64
NET PROFIT (BEFORE TAXES)	2.96	2.86	2.07	2.00	1.83	2.26	3.58

Current Ratio = Current Assets ÷ Current Liabilities

Quick Ratio = Cash and Receivables ÷ Current Liabilities

Worth Debt Ratio = Net Worth ÷ Total Liabilities